THE MEDICAL JOURNAL OF AUSTRALIA

VOL. I.—29TH YEAR. SYDNEY, SATURDAY, APRIL 25, 1942. No. 17.

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An Address.[1]

By W. F. SIMMONS,

President of the New South Wales Branch of the British Medical Association.

MAY I thank you for the honour of electing me your President for the year 1942.

While conscious of the added responsibilities of such an office in this time of grave national crisis I trust that, with the support of the Council and its excellent executive officers, I shall be able to meet problems as they arise and guide our Association into the calmer waters of world peace.

In his splendid presidential address last year Colonel Vickers pleaded for a closer liaison between the profession and those outside bodies whose work is either complementary or supplementary to that of the medical profession and also for medical men to have a wider vision on national problems. As one who for more than twenty years has been particularly interested in the question of medical politics—both as Honorary Secretary of a Local Association, and as a member of this Branch Council and for several years one of your representatives on the Federal Council—I hope I may be forgiven for dealing with matters in this address which relate to that side of the Association's work rather than with some cultural, scientific or historical side of medicine.

Within two days of the outbreak of war our Federal Council met in Sydney. At that meeting it was unanimously decided that we should inform the Prime Minister that the medical profession was ready to offer its services unreservedly to the nation. The general feeling among members of the Federal Council was that the only fair way to do so was to ask that the profession be conscripted. Our decisions were conveyed to the Prime Minister by the President and in due course our offer was accepted, but we were informed that it would be impossible to conscript one section of the people. While realizing that this was so, I feel certain that the great majority of members believe that conscription is the simplest method of spreading the work and coordinating the civil and defence services. Now that the war has come to Australia and all men up to sixty years of age are liable for service, the need for one unified control of all medical services is apparent. At the same time I think what has been done voluntarily by the profession deserves a brief review, for I feel certain that even our own members are unaware of the extent of this work.

At the present moment nearly 25% of the members of this Branch are on full-time service with the armed forces in Australia or overseas. To these must be added the hundreds of men and women who do medical examinations for the armed forces and at the same time look after the civilian population. This latter work cuts into legitimate time for relaxation because those who remain in civil practice are looking after not only their own patients but also those of their absent colleagues. In this State over 300 of our members are engaged in the work of National Emergency Services. At the present time these services are restricted to a very small but densely populated area of the State. This work is done mostly at night after the routine work is over and at week-ends and is voluntary. Here again what might be regarded as time for rest and reading of current medical literature has to be sacrificed in national service.

Honorary service is given by the profession to the Red Cross Society and lectures and examinations are conducted for first-aid and home nursing classes.

The staffs of public hospitals have been sadly depleted and the remaining honorary medical officers, with the

[1] Read at the annual meeting of the New South Wales Branch of the British Medical Association on March 26, 1941.

assistance of overworked general practitioners, are giving extra service and allowing themselves to be rostered so that the civil population may be given the best service possible at all times.

Has any other section of the community voluntarily given so much of its time, its rest, even its health in the national need? I ask this question, not because I think it needs to be asked, but because I feel that it may be taken as an earnest of our willingness to serve and give of our best to the nation at all times. There is no doubt that, if even darker days are ahead of us, the Association will make still greater sacrifices to keep Australia free.

Having briefly reviewed what we as an Association are doing now, may I pass on and say something about post-war developments in the Association and in medical practice?

If we are to consider any reconstruction in the post-war period, then I think we should first set our own house in order. We have always prided ourselves that our Association is most democratic. Our Council is elected and its officers are appointed, annually. Nomination is open to all members of the Association. Does this method always produce the best results? Does a true cross section of the profession gain representation on the Council of the Association? The fact that, except on certain rare occasions, not more than 25% of members exercise their right to vote might suggest either that the Council is so efficient that it has the complete confidence of both voters and non-voters, or else that it is so ineffectual that the bulk of the members do not bother themselves to alter its composition.

In the very large Council of the Parent Body sectional interests, such as the armed forces, medical officers of health, and medical women, have direct representation on the Council. Would it not be possible to amend our by-laws or coopt representatives of, say, the Public Medical Officers' Association and the Medical Women's Society to the Council? Representation of country practitioners on the Council is a very important question. We have been fortunate in having one country practitioner who has sacrificed time, sleep and financial gain so that we might benefit by his advice and the country practitioner might have his viewpoint presented first hand. In the post-war period might not some others emulate his example?

Having briefly discussed representation in our State council, I shall ask you to allow me to discuss our federal organization.

I do feel that whether we like or not we shall have to think federally in the future. The Commonwealth will become paramount and the powers which it has received through the *National Security Act* will be very reluctantly given up. Whatever our own private views, I hope we shall be big enough to be good Australians first.

The Federal Council is at present the unifying body, but its powers are strictly limited and its machinery is very slow. The establishment of a representative body would make the government of the Association in Australia much easier. The number of representatives from each State would depend on the membership of the Branches. As in the Commonwealth act, the larger States would have more representatives than the smaller States, but all votes would not have the same value. Tasmania, for instance, would have more representatives in proportion to membership, say, than New South Wales. The meetings of the Representative Body could be held two-yearly, and the Congress as we now know it could become part of the meeting and would be analogous to the meeting of the Parent Body in England. Whether New Zealand would like the cutting out of the Congress is open to question, but I think this could be overcome by holding the representative meeting in Australia and the scientific meeting in New Zealand, as happened when the British Medical Association held its annual meeting (its scientific gathering) in Melbourne in 1935.

The Federal Council as we know it now could have similar representation as at present and could be the Executive Committee of the Representative Body and could meet twice a year as at present, except in those years when the Representative Body met. The cost of meetings of the Representative Body would be very great, and members would have to be prepared to pay a higher capitation rate to the federal fund; but I feel sure the results obtained would be well worth while.

The establishment of a Federal Secretariat would necessarily follow, but I feel that details could be worked out later.

The need for a small Emergency Committee would be a very important point for the Representative Body to consider. From time to time matters arise between meetings of the Council which throw great responsibility on the President, and I feel sure that he would welcome the advice of, say, three of his senior colleagues when such decisions have to be made quickly. The decisions of such a committee could be confirmed at the next meeting of the Council or Representative Body. We must think federally, act generously and pay willingly.

Having offered these suggestions about our own Association, may I now pass to the more vexed question of the future of medical practice?

During the 1914-1918 war I often heard men say that medical practice would never be the same again, and that the post-war changes would be very great. But were they?

In 1912 Mr. Lloyd George placed on the statute book the now famous *National Health Insurance Act*, and war broke out shortly afterwards. In 1938 in Australia the *National Health and Pensions Insurance Act* was introduced, and war broke out in 1939.

For the past four years articles and letters have been appearing in THE MEDICAL JOURNAL OF AUSTRALIA showing a diversity of opinions among members in Australia. More recently our own Federal Council put before members its "Scheme for a General Medical Service for Australia", while within the last few months the National Health and Medical Research Council reported to the Federal Minister for Health on a full-time salaried service to meet the health needs of the Commonwealth.

Are we not, however, approaching the whole problem from the wrong angle? Has our social legislation advanced so far that the provision of a medical service is the last link in a complete chain of national regeneration?

Is it not more necessary to provide adequate and decent homes, the right food, good working conditions, a reasonable wage and sufficient recreational and educational facilities, which combined would diminish the sickness incidence greatly, rather than provide a complete medical service to treat and, if possible, cure diseases which are the result of lack of any or all of these decencies of life?

If these problems were honestly tackled by any government and if the question of preventive medicine received reasonable consideration at the hands of our political leaders, then I feel that there would be a wonderful opportunity for the profession to cooperate in producing a service which would be in the best interests of Australia and worthy of the men and women providing it.

If, however, these conditions seem too ideal, what are the alternatives? Briefly the possibilities are as follows:

1. Medical practice will continue as at present.

2. The profession will be nationalized; I mean thereby that most members of the profession will be salaried officers of the State (compare teachers of the Education Department), but medical practitioners will still be allowed to carry on private practice if they so desire.

3. A form of national insurance will be introduced based on a contributory system of payment such as has been introduced in New Zealand. Such a system would provide only a general practitioner service and specialists' services would be provided by private practitioners, by hospitals or by a combination of both.

4. A complete system of national insurance on a contributory basis will provide a complete medical service, the general practitioner being paid on a *per capita* basis and the specialist from a pool.

5. A system will be created whereby a great part of medical practice is carried on by medical practitioners paid on a salaried basis but still retaining the right of private practice.

6. A scheme of voluntary insurance will be drawn up by the profession itself.

Let us now look at these various possibilities in more detail.

1. If medical practice is to continue as at present, then I think we should be prepared to draw attention to its good points and its weaknesses. Medical practice has developed along definite lines in Australia during the past hundred years. The general practitioner service has been the foundation on which the whole medical service has been built. This service has been available within certain limits either as a form of contract practice or as ordinary private practice. Contract practice is provided through friendly societies, which provide a service for 25% of the population of Australia, large industrial unions and in some areas by private contract with individuals. This contract practice is, however, limited and does not provide a complete cover, which has to be supplemented by honorary medical service given at a public hospital or else by private arrangement between the recipient and the doctor concerned. This is a decided weakness in the present form of contract practice.

Private practice is available for those who are able to pay for it and is also given by the profession to those who are too poor to belong to any contract practice group. This is most willingly done and the profession is only too happy to give it. Surely, however, the unemployed and the unemployable are a communal responsibility, and it is not right nor just that the profession should be expected to shoulder the responsibility of their treatment. The development of the public hospital system with its large out-patient departments and its visiting honorary medical officers makes one wonder whether some other system would be more in the patients' interests and save the valuable time of the visiting honorary medical officers. Were these out-patient departments turned into consultative clinics and the preliminary investigation done by a general practitioner, then the patient would be saved much time and the consultant be available for other work. The provision of an intermediate service is also a problem which will have to be faced by those who desire no change in the present system of medical service.

In the six possibilities proposed, consultative and specialist practice will continue as at present, whether it is given by a full-time salaried service, paid from a pool or paid private fees.

2. The second possibility is, in general outline, the proposal of the National Health and Medical Research Council. Here we have a huge service employing roughly about four thousand practitioners from junior resident medical officers to senior consultants *plus* a large medical administrative staff. The public would be regimented. There would be no free choice of doctor. The family physician who has been guide, philosopher and friend to countless thousands, would be replaced probably by a good doctor, but he would remain the servant of a large department with no choice as to the area in which he worked nor the length of time in which he remained in any one area. Promotion would be slow, and the larger part of a practitioner's professional life would be over before he became a senior. To give the public a good service should be the aim of any nationalized system of medical practice, and to get this the terms of service must be such that the men and women giving it are contented and happy in their work.

In view of the expense involved and the state of the national exchequer at the end of this present war, I very much doubt whether any government would be brave enough to face this social experiment for many years to come.

3. The contributory form of national insurance is in its infancy in New Zealand and it is rather early yet to judge of its effect. Here, for a regular weekly contribution, the beneficiary receives a complete medical, hospital and pharmaceutical service *plus* other social benefits. At the present time the social service department is paying the doctor at a fee per service rate and the profession is accepting it. While the fund is solvent it should work well, for the public are getting the same service that they had before the act came into force, *plus* free pharmaceutical and hospital service, and the doctors are being paid fixed fees. Doctors may claim fees directly from the Social Security Fund or they may continue to claim and receive any fee from the patient, but they have not the right to recover from him a fee in excess of the prescribed fee.

On two points at least the New Zealand *Social Security Act* has violated constitutional principles, namely: (i) The Minister in certain matters is final judge without appeal. For centuries it has been held proper to keep judicial functions beyond the reach of party politics. (ii) Alone, among all sections of the people, the family doctor is debarred from authority of court to obtain full settlement for services privately agreed upon and duly rendered. This is an invasion of a civil right hitherto common to all.

4. The fourth possibility is the one sponsored in the Federal Council's "Scheme for a General Medical Service for Australia". This would include all those with an income below £416 *per annum*. The general practitioner would be paid at a capitation rate as is done at present in contract practice, while specialist services would be paid for from a pool. This would allow practice to continue very much as at present, and, provided the rate was reasonable, the conditions of service fair and the lists limited, the public should get a good family service, which, after all, is what is wanted.

Reasonable hours of work, opportunity for post-graduate training and holiday relief are problems which would have to be considered, as these are some of the principal attractions of a service envisaged by the National Health and Medical Research Council.

5. The system whereby a great part of medical practice is carried on by medical practitioners on a salaried basis with the right of private practice has been in force mostly in Queensland, where the men are content to work under it. Certainly a large part of the work is done at public hospitals, and as the profession must be prepared sooner or later to have some declared policy on the staffing of public hospitals, the experience of the practitioners in Queensland will be most helpful.

6. The provision of a voluntary insurance by the profession itself is by no means new. In 1911 the late Dr. F. Antill Pockley, then a leader in Association matters, put before this Branch his scheme for a voluntary medical service. The premium rate depended on the class of service required. This service was for those ineligible for friendly society benefit on account of their higher income. The premium rate was from five to ten pounds *per annum* according to the service required. In the last post-war period the Parent Body put forward its scheme for a public medical service for those whose income exceeded that of the *National Health Insurance Act* and also for those who were excluded from its benefit for other reasons. Where properly organized, these services are supplying a public need and are growing in popularity. The schemes put forward in our own State by the practitioners at Scone and Canberra have not been able to develop as we should like to see them develop on account of war conditions.

While it is not directly a voluntary scheme run by the profession, mention might be made of the Bankers' Health Society. Here is a cooperative health scheme put forward by a section of the community which is prepared to insure itself against all sickness and accident. The members pay 1s. 3d. for a single unit and 2s. 6d. per week per family unit. For this each contributor receives a contribution towards all medical, surgical, specialist, dental, optical and pharmaceutical expenses. This society is growing and at latest figures available to me had about 4,000 contributors.

In one area of New South Wales all the practitioners were prepared to work in conjunction with an area hospital benefit scheme to give an all-in medical service at a regular weekly rate which would be collected by the one agency. It was felt that there was the need in the area for such a scheme, and as it was the unanimous wish of all the men residing in the area, I hope that when conditions return to normal it may be possible for this experiment to be carried out.

The success in the Sydney area of the Metropolitan Hospitals Contribution Fund—according to the provisions of which for a contribution of threepence per unit and sixpence per family the beneficiary receives £2 9s. per week for twelve weeks towards his expenses in a public hospital and £2 2s. per week for eight weeks towards his expenses in a private hospital, has made many of your Council members wonder if such a scheme could not be applied to medical benefits. The Secretary of the Metropolitan Hospitals Contribution Fund informs me that according to his latest figures 800,000 people or two-thirds of the total population of this city are covered by this fund for hospital benefit. His fund also runs a "B" scheme, according to which by the payment of double rates the benefits are £4 14s. 6d. and £4 4s. per week. If we, as a profession, could arrange with some such organization to sell medical as well as hospital benefits, then I feel sure that our scheme for a voluntary insurance would be a great success.

And now having reviewed future possibilities, may I return to the present need. Australia is fighting for her very existence. We must be prepared to make sacrifices, even to jettison principles for which we have fought hard. We must be prepared to accept during the crisis any terms of service which our leaders consider best in the national interest; but, having accepted them, let it not be forgotten in the days to come when this Brave New World is being planned, that the medical profession is always ready and willing to cooperate in all movements in which it feels it can be of service, and that in all medical planning it has the right to be consulted at the beginning and not when the final draft is completed.

STANDARDIZATION OF HÆMOGLOBINOMETERS.

By J. D. HICKS,
Research Scholar in Pathology, Women's Hospital, Melbourne.

THE confusion which is brought about by the many different hæmoglobin standards in existence has been pointed out in recent papers appearing in this journal.[1][2] Hæmatologists are aware of this unfortunate multiplicity of standards, and while agreement has not been reached as to the number of grammes of hæmoglobin to be regarded as 100%, the difficulty is partly circumvented by attempts to educate the members of the medical profession to think in terms of grammes of hæmoglobin rather than in terms of a percentage of some standard of "normality".

Of even greater import is the use of a hæmoglobinometer which gives an incorrect reading. Wardlaw in his paper mentioned variations in standards produced by a German manufacturer, but found no confusion in Newcomer standard disks of American origin. I wish to report here the results of some tests performed on hæmoglobinometers in use at the Women's Hospital, Melbourne, with the object of emphasizing the extraordinary discrepancies which occur in individual instruments. It is only by drawing attention to such errors by manufacturing firms that the clinician and his patients will be protected from serious diagnostic and therapeutic mistakes. The most common clinical type of hæmoglobinometer is based on the use of the Sahli acid hæmatin method, in which the hæmoglobin of a sample of blood is converted to acid hæmatin by the addition of one-tenth normal hydrochloric acid. All the instruments tested were of this type, the blood sample being diluted to a fixed volume and the colour matched with a varying standard or diluted until it matched a fixed standard.

An American hæmoglobinometer, of A make, was supplied with a diluting tube graduated in grammes of hæmoglobin per 100 cubic centimetres of blood and also in a percentage scale, 100% being equivalent to 17 grammes of hæmoglobin per 100 cubic centimetres of blood. The colour standard consists of two plano-parallel glass bars. In comparison with a standardized hæmoglobinometer at the Royal Melbourne Hospital the A instrument gave a reading several grammes higher than was expected, so that it was decided to compare the results obtained with this instrument with those obtained when Van Slyke's gasometric oxygen capacity method was used.

Methods and Results.

Citrated human blood, usually the remnants of transfusions, was used throughout the experiments. The removal or addition of supernatant plasma provided various concentrations of erythrocytes and therefore of hæmoglobin. The blood was thoroughly mixed by slow rotation in a tonometer for a period of about twenty minutes. Samples were then taken for the Van Slyke and acid hæmatin estimations. The Van Slyke reading was the average of at least two duplicated results. For the acid hæmatin method two samples were withdrawn into twenty cubic millimetre pipettes and expelled into square diluting tubes, one into a B tube marked to 170, the other into the A tube marked to 140. The samples were matched with the standard against a daylight lamp. Results were read as percentages and converted into grammes of hæmoglobin per 100 cubic centimetres. The B tube gave a reading about 3% higher than the A tube.

When the readings of the A tube, a 17 gramme standard, are plotted against those obtained by the Van Slyke method, they are seen to have a straight line relationship with them (Figure I). The conversion factor,

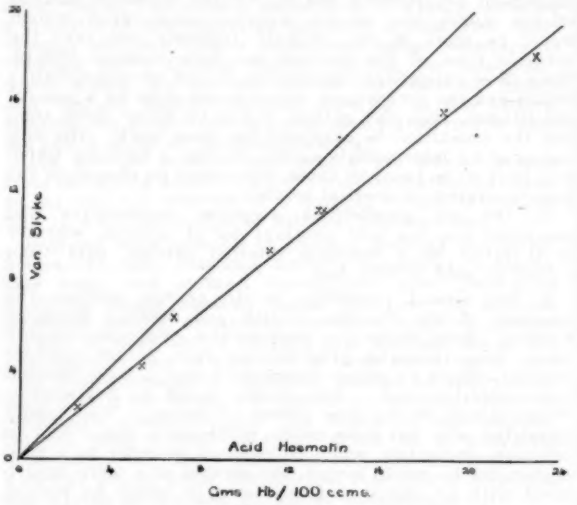

FIGURE I.

which brings the readings of the A hæmoglobinometer into the closest alignment with the Van Slyke readings, reveals the true value of the 100% mark as approximately 14 grammes of hæmoglobin. That is, if readings on the percentage scale were regarded as percentages of 14 grammes of hæmoglobin, instead of 17 grammes as marked on the tube, the results would closely approximate those obtained by the Van Slyke estimation (Table I).

As sold by the manufacturer, this instrument would represent a sample of blood as containing 17 grammes of hæmoglobin when it actually contains only 14 grammes, or if the reading were 50%, of containing 8·5 grammes instead of 7 grammes, the correct figure. Samples of blood are thus credited with about 20% more hæmoglobin than they contain.

Other hæmoglobinometers in use at the hospital were compared with the now standardized A instrument. Samples were taken from citrated blood, thoroughly mixed, as before, in a tonometer. A separate 20 cubic millimetre

TABLE I.

Number of Experiment.	Oxygen Capacity. (Grammes; Van Slyke.)	A Hæmometer, in Terms of Standards.			
		Percentage.	17·0 Grammes.	14·5 Grammes.	14·0 Grammes.
14	2·3	15·0	2·55	2·18	2·1
13	4·2	32·0	5·4	4·6	4·45
8	6·34	40·0	6·8	5·8	5·6
17	9·35	65·0	11·0	9·4	9·1
10	11·1	78·0	13·2	11·3	10·9
12	11·1	79·0	13·4	11·4	11·1
9	15·44	110·0	18·7	15·9	15·4
11	18·0	134·0	22·8	19·4	18·7
Total	77·83		93·85	79·98	77·35
Ratio	14·0		16·9	14·4	13·95

pipette and diluting tube were kept apart for each instrument throughout the experiments. The results were read as percentages and converted into grammes per 100 cubic millimetres, in the case of the A instrument according to the scale of 14 grammes per 100%. The results are as follows.

1. C hæmometer, 14 gramme standard. On an average the results differed from those of the A instrument by less than 1% (seven estimations).

2. Two Japanese hæmoglobinometers. (i) The first had a tube partly filled with liquid as the standard, and was supplied with a round B diluting tube graduated to 140 divisions (marked Sahli value). The average readings were 5% higher than those given by the A instrument. (ii) The second had a solid glass rod as standard and a similar graduated tube. The readings were 1% higher than those of the A instrument.

3. D hæmometer, 16 gramme standard, with rotating glass wedge for comparison. The percentage readings were about 13% higher, and when the results were expressed in grammes of hæmoglobin the D instrument indicated a hæmoglobin content about 27% above the result given by the A instrument. For example, a sample of blood recorded 60% on the A instrument (14 grammes standard) and 68% on the D instrument (16 gramme standard). Expressed in grammes, these results are respectively 8·4 and 10·9, a difference of nearly 30%.

4. Two E hæmometers, each with two round glass rods as colour standards and between them a round diluting tube graduated in grammes and percentages, 100% representing 14 grammes of hæmoglobin. By artificial light these instruments gave readings 3% higher than the A instrument, but if they were read by daylight they gave approximately the same value.

5. B hæmometer, with two plano-parallel glass rods as standard and a square diluting tube (B) marked to 170. This instrument was supposedly a 14 gramme standard, but gave results 20% higher than the A hæmoglobinometer. For example, when the true reading was 60%, this instrument recorded 72%, and instead of 85%, 102%.

In order to see the limits imposed upon hæmoglobinometers by their subsidiary parts, sampling pipettes and graduated diluting tubes were examined. Six pipettes of 20 cubic millimetre capacity were tested for accuracy by filling them to the mark with tinted water and expelling the water and weighing it. There was a variation of less than 2% between individual pipettes in the average of three readings.

A series of graduated tubes were examined by placing some mercury in the first tube, the level being read. The mercury was then tipped from tube to tube and the level was noted in each tube. This procedure was repeated with varying amounts of mercury. Six square graduated tubes were compared. Four B tubes gave exactly the same reading at all levels and a fifth gave a reading 3% higher. The A tube was 3% lower.

A series of round tubes was then tested. Tubes 1 to 6 were graduated to 140 divisions and marked "Sahli value"; tubes 7, 8 and 9 were B tubes marked on one side to 140 (labelled Sahli) and on the other to 170, labelled "%Hb". In these tubes (7, 8 and 9) the reading was taken on the side of 140 divisions. Tubes 10 and 11 were from the E hæmoglobinometers. The results are shown in Table II. Not only did some tubes give a higher reading than others, in some cases 6% to 8% higher, with the same volume of liquid, but there was a slight variation in individual tubes, particularly in the lower values. This latter variation is probably of no clinical significance, but the former, where the differexce is as much as 8% (see tubes 1 and 5), is another matter.

It might be argued that the higher reading was due to a tube of narrower bore, and that this in practice diminished the thickness of the column of liquid, so that in the thinner tube the acid hæmatin would require less dilution to be matched against the standard, thus compensating the otherwise high reading. Some tests showed that the extent of this compensation was about 2%, reducing the high reading in the thin tube (number 5) from 8% to 6%.

Comment.

Of the six different makes of hæmoglobinometers tested, three gave widely discrepant results. The variation was in the direction of an over-estimation of the amount of hæmoglobin present, in the A instrument by 20%, in the D instrument by 27% and in the B instrument by 20%, although the reputable firms produce with these instruments some form of attestation as to their accuracy. The A hæmoglobinometer is supposed to be manufactured in two standards, 17 grammes and 14·5 grammes. In Table I the calculated results are shown when the percentage readings are converted into grammes of hæmoglobin according to these standards. The instrument is neither a 17 nor a 14·5 gramme standard, but a 14 gramme standard.

It is thus left to the purchaser to find out whether his instrument is correct. Facilities for checking instruments are available only in the larger public hospitals where there is a hæmoglobinometer standardized by a reliable procedure such as the Van Slyke oxygen capacity method.

The grave danger to the patient may be understood when, for instance, a reading of 50% is obtained with any of these faulty instruments. The actual hæmoglobin value is only 40% or less, and the faulty reading may be the factor which weighs against the giving of a blood

TABLE II.

Results of a Comparison of a Number of Tubes.

Numbers of Tubes.										
1	2	3	4	5	6	7	8	9	10	11
26·5	26·5	27·0	27·0	28·0	27·5	28·5	28·0	27·0	25·5	25·5
51·0	51·0	52·0	51·0	54·5	53·0	53·5	53·0	52·0	49·5	49·5
105·0	105·0	107·0	105·0	111·5	110·0	108·0	109·0	105·5	102·0	102·0
133·0	133·0	136·0	134·0	142·0	140·0	137·0	139·0	134·0	130·0	130·0

transfusion; or in anæmia of doubtful origin the calculation of the colour index from the hæmoglobin reading obtained from such an instrument may commit the patient to prolonged, expensive and unnecessary liver therapy.

An interesting point is brought forward by an analysis of the relation of the readings of the A instrument to those of the D instrument. For example, the A instrument purporting to be a 17 gramme standard, read 98% (16·6 grammes), while the D instrument, purporting to be a 16 gramme standard, read 109% (17·4 grammes); or again the readings were 80% (13·6 grammes) compared with 87% (13·9 grammes). That these results differ by only about 4%, when read in grammes, is astonishing when it is realized that the A instrument is actually a 14 gramme standard. One is thus led to believe that the D instrument has been calibrated from a similar instrument to the A—that is, from a hæmoglobinometer supposedly of 17 gramme standard, but actually of 14 gramme standard.

With regard to the graduated diluting tubes, it is emphasized that each diluting tube should be tried with the colour standard so that the reading it gives can be compared with that of the original tube used in the standardization of the instrument. Tubes are frequently graduated to 140 divisions and marked "Sahli value" (17·3 grammes); but they give correct readings when used with a hæmoglobinometer of 14 gramme standard. Some tubes have also 170 graduations on the opposite side. A reading taken on this scalé is not consistent with any well-accepted standard and appears to be valueless. The only way to avoid gross confusion is to compare all diluting tubes with that used in the original checking of the hæmoglobinometer.

Summary.

Examples have been given of three hæmoglobinometers made by well-known firms; the instruments, at their face value, estimated samples of blood to contain 20% more hæmoglobin than was actually present.

While the onus is at present on the purchaser to find out whether his instrument is correct, it is to be hoped that it will not be long before a bureau of standards or some similar controlling body will protect the public by ensuring correct standardization of these instruments.

Acknowledgements.

My thanks are due to the many members of the staffs of the pathology departments of the Royal Melbourne Hospital, of the Women's Hospital and of the Department of Physiology, the University of Melbourne, who have helped so generously with assistance, advice and loan of apparatus.

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NEW LIGHT ON THE PAINFUL SHOULDER.

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In an article published a year ago (1941) concerning the use of local analgesia in fibrositis, I mentioned my failure to relieve painful shoulders by this method. Further experience, however, led me to add a footnote stating that I had been able to relieve several patients suffering from painful disability of the shoulder by infiltrating tender lesions situated in or beneath the upper fibres of the trapezius muscle. In the present essay the results in thirty-two cases will be briefly summarized.

The Clinical Picture.

The recently qualified graduate, on entering medical practice, will be puzzled by cases of painful shoulder which crop up from time to time. In spite of variations in the severity of the symptoms and the mode of onset, a remarkably constant clinical picture is presented in the well-developed case. The main features are: (i) pain in the shoulder on abduction of the humerus, (ii) severe aching at night, (iii) tenderness on the "point" of the shoulder.

The pain on movement may be of all grades of intensity, from a severity which limits all movement, to a twinge which is felt when the humerus is near the horizontal while it is being raised or lowered. It is usually felt near the insertion of the deltoid rather than in the joint itself, though it may radiate more widely.

The aching at night is usually the patient's chief complaint; the pain on movement is more easily borne than the ache, which prevents sleep and produces a wan, haggard expression.

The patient may be unaware of any localized tenderness and mystified by the severe pain which has so few signs. Examination, however, usually reveals a point of tenderness on the greater tuberosity, which disappears under the acromion on abduction ("Dawbarn's sign"). This sign may be absent, or tenderness may be more widespread over the deltoid region.

Crepitus may be felt in the shoulder on abduction; if present, it is sometimes present in the unaffected shoulder also. It is due to roughening of the synovial surfaces in the subacromial bursa, which acts as a subsidiary joint to the shoulder on abduction, when the greater tuberosity rubs against the under surface of the acromion.

In severe cases of shoulder disability ("frozen shoulder") fixation of the joint, at first by muscular spasm and later by adhesions, may be present, and trophic changes may be in evidence in profound muscular wasting and decalcification of bone. In a few cases the skiagram reveals opacities close to the great tuberosity; this is usually due to calcified deposits in the supraspinatus tendon. When present, similar deposits may be seen on the unaffected side. In the vast majority of cases, however, X-ray examination reveals no abnormality of the shoulder.

In less than half of the cases the patient gives a history of an injury to the shoulder; this usually takes the form of a fall on the outstretched arm or the point of the shoulder ("stubbed shoulder"). When the pain follows an injury, there is usually an interval of a few days or even weeks between the injury and the full development of the syndrome. In the majority of cases there is no history of injury, and the symptoms come on gradually. In some cases the shoulder is affected along with other joints in a polyarticular manifestation, as in those which often followed rubella during the epidemic in 1940.

Local Anæsthesia for Shoulder Lesions.

Reports of Cases.

In his first paper on muscular pain (1938), Kellgren described a case of disabled shoulder in which the symptoms were greatly relieved and the limitation of movement was abolished by infiltration with local anæsthetic of a tender spot in the upper and anterior fibres of the deltoid muscle. Presumably this spot corresponded with that usually found over the greater tuberosity. In a series of cases I found that infiltration of this spot usually relieved the pain, but was followed by a severe and painful reaction, with no permanent relief. Thus, in spite of excellent results with rheumatic pain elsewhere, I was led to abandon my efforts to relieve painful shoulders in this manner. My interest was then reawakened by the following case:

Case I.—R.J.M., a man, aged thirty-two years, complained of pain in his right shoulder of six days' duration. The pain was felt upon abduction, when the humerus was near the horizontal, and it was referred mainly to the region of the insertion of the deltoid. He also complained of aching at night. He informed me that for a few days before the shoulder became painful he had had a stiff neck. This led me to examine his trapezius muscle; and, in addition to the usual tenderness over the greater tuberosity (Figure

I, B) a circumscribed area of acute tenderness was found in the trapezius at the root of the neck (Figure I, A). The skin just external to this was faintly discoloured by ecchymosis.

This tender area was infiltrated deeply and widely with "Percaine" (1 in 1,500) until there was no trace of the tenderness. It was then found that the patient could raise his humerus without pain and that the tenderness at the point of the shoulder had disappeared. The patient had no further pain in his shoulder, though some stiffness was present at the root of the neck for twenty-four hours.

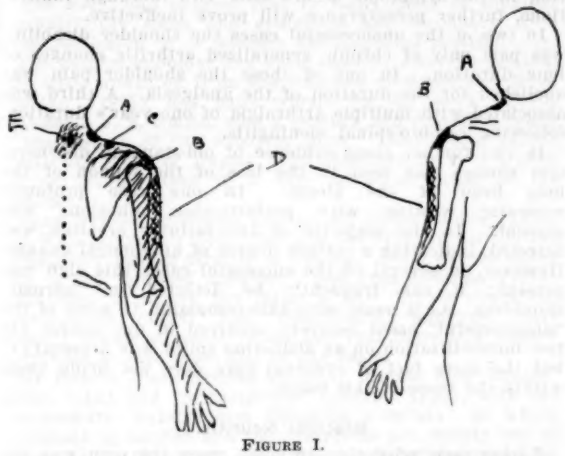

FIGURE I.

A: site of lesion in Case I; B: tenderness over greater tuberosity in Case I; C: site of lesion in Case II; D: tenderness in Case II; E: lesion in Case IX, surrounded by area of tenderness. Oblique shading from scapula to hand = area in which pain was felt in Case IX.

The success in this case led me to inspect the trapezius muscle in all further cases of shoulder disability, and with remarkable consistency a lesion was found in the upper part of the muscle.

CASE II.—R.S.G., aged twenty-four years, complained of generalized rheumatic pain of ten days' duration, commencing three weeks after an attack of rubella. The pain was felt in many joints, of which the left shoulder was the most affected. Here the pain occurred mainly on abduction and was felt down the outer side of the humerus (Figure I, D). A tender spot was found in the left trapezius in the mid-scapular line (Figure I, C). Firm pressure here with the palm of the hand enabled abduction to be performed painlessly. Infiltration of the lesion abolished the pain. A week later he had had no more pain in the shoulder, though the condition of the other painful joints had not improved.

CASE III.—The patient, a corporal in the army, had suffered a dislocation of the right acromio-clavicular joint a month previously. He now complained of pain behind the shoulder, felt on abduction and external rotation (Figure II, B). There was some residual subluxation of the joint, but there was no limitation of passive movement of the shoulder, and the muscles were not wasted. A lesion was discovered in the supraspinous fossa, near the base of the scapular spine (Figure II, A). Infiltration abolished all pain, and he returned to duty a week later.

CASE IV.—F.B., a man, aged fifty-nine years, had been treated at Perth Hospital out-patient department for six months. He complained of a painful right shoulder, which ached at night. There was no history of injury and the X-ray appearance was normal. On examination on January 8, 1942, he was found to have limitation of movements of the shoulder, due to pain rather than to adhesions. A little muscular wasting was seen, and crepitus was felt in the subacromial bursa. The region of the bursa was tender (Figure II, D). Tenderness was discovered also in the upper fibres of the trapezius medial to the mid-scapular line (Figure II, C). Infiltration with "Novocain" abolished most of the pain. On January 14 he said that there was no pain on movement, but the shoulder ached slightly every night. On February 4 he said that no aching had occurred for two weeks and there was no pain on movement. Crepitus was still present in the subacromial bursa.

CASE V.—E.G., a woman, aged fifty-nine years, had had a painful right shoulder for nine months, for which she had been receiving treatment at Perth Hospital out-patient department for five months. The disability had commenced after a fall in which she struck the shoulder. She complained of aching at night, of pain and of limitation of movement. Abduction and external rotation were painful, but her main complaint was that she could not draw the humerus directly backwards or place her arm akimbo (Codman's "dorsal flexion"). On examination, on January 21, 1942, she was seen to have some muscular wasting and

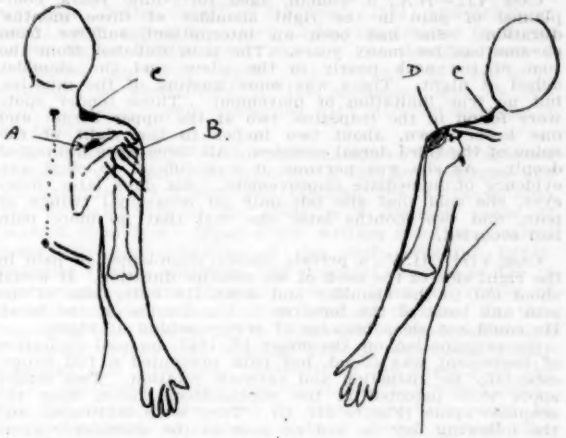

FIGURE II.

A: site of lesion in Case III; B: area in which pain was felt in Case III; C: site of lesion in Case IV; D: tenderness over tuberosity in Case IV.

considerable limitation of movement. There was tenderness over the bicipital groove (Figure III, B). The trapezius was tender in the mid-scapular line (Figure III, A) and infiltration here caused an immediate lessening of pain and limitation of mobility. On February 4 the patient said that pain and stiffness had been severe for forty-eight hours after the injection, but that the shoulder had given her no pain at all for twelve days. There was no limitation of movement, except on the extreme of dorsiflexion. She could place the arm akimbo with little trouble.

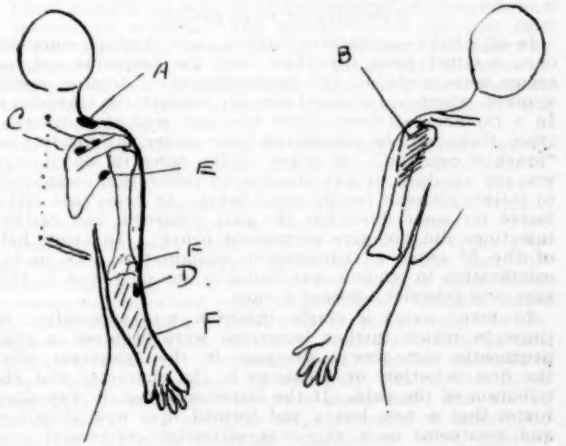

FIGURE III.

A: site of lesion in Case V; B: referred tenderness in Case V; C: scapuluar lesions in Case VIII; D: forearm lesion in Case VIII; E: lesion in *teres minor* (Case VIII); F: (shading) distribution of pain from lesion at D.

CASE VI.—The patient, a sergeant in the army, complained of pain in the left shoulder of three weeks' duration. It would shoot down to the middle of the humerus on abduction and external rotation. On examination tenderness was found over the great tuberosity. There was no true limitation of movement. The X-ray examination revealed an elongated,

discrete opacity above the head of the humerus and a small opacity in the tendon of the subscapularis. Tenderness was present in the trapezius in the mid-scapular line, and pressure here with the hand caused lessening of the pain on abduction. The tender area was infiltrated thoroughly, and afterwards the pain on abduction was much diminished. On the following day there was no pain on movement and no tenderness over the head of the humerus. Three days later he returned to his unit, completely free from pain. A skiagram of the opposite shoulder revealed no unusual shadows.

Case VII.—H.A., a woman, aged forty-nine years, complained of pain in the right shoulder of three months' duration. She had been an intermittent sufferer from rheumatism for many years. The pain radiated from the root of the neck nearly to the elbow and the shoulder ached at night. There was some wasting of the muscles, but no true limitation of movement. Three tender spots were found in the trapezius, two at the upper border and one lower down, about two inches to the right of the spine of the third dorsal vertebra. All three were infiltrated deeply. As she was nervous, it was difficult to elicit any evidence of immediate improvement. Six days later, however, she said that she felt only an occasional twinge of pain, and two months later she said that no more pain had occurred.

Case VIII.—H.W., a private soldier, complained of pain in the right side of the neck of six months' duration. It would shoot out to the shoulder and down the outer side of the arm and back of the forearm to the dorsum of the hand. He could not sleep because of severe aching at night.

On examination on December 18, 1941, no real limitation of movement was found, but pain prevented a full range, especially on abduction and external rotation. Two tender spots were detected in the supraspinous fossa, near the scapular spine (Figure III, C). They were infiltrated, and the following day he had no pain in the shoulder region; but the pain still persisted from the mid-humeral region to the back of the hand (Figure III, F). A few days later examination of the forearm revealed a tender area in the *extensor digitorum communis*, about three inches below the external epicondyle (Figure III, D). Infiltration abolished the pain in the forearm, and three days later there was no pain in the forearm and hand. The upper element of pain had returned, however, necessitating a further injection in the supraspinous fossa. A few days later the pain in the shoulder had disappeared once more. A little later it was necessary to infiltrate a lesion in the *teres minor* (Figure III, E) and one or two subsidiary injections were given for minor pains in the forearm. On January 27, 1942, he was discharged from hospital to his unit, having had no pain whatever for two weeks.

Summary of Case Records.

In all I have encountered sixteen cases in which complete cure resulted from injections into the trapezius (or, as seems more probable, the supraspinatus or *levator anguli scapulæ*, which are situated directly beneath the trapezius). In a further half-dozen cases the pain was of a different type; these will be considered later under the heading of "brachial neuritis". In many of the cases in which cure was not obtained, it was possible by infiltration completely to relieve all pain for the time being. In some this relief lasted for some days, but the pain returned, and further injections did not give permanent benefit. In about half of the 32 cases a radiographic examination was made; calcification in tendons was found in one only, and in this case one injection effected a cure.

In many cases a single injection was successful; in those in which further injections were required a good prognostic sign was a decrease in the symptoms after the first injection, or a change in the character and distribution of the pain. If the latter occurred, it was often found that a new lesion had formed in a new situation, and treatment as a rule was ultimately successful (see Case VIII).

Before infiltrating a lesion it is interesting to try the effect of flat pressure over the affected area of the trapezius. In nearly every case the pain on abduction is either completely abolished or considerably reduced, to return when the pressure is removed. After a wheal has been raised on the skin, the tender area is well infiltrated. It is interesting to put the patient through his movements immediately, and find that the pain either has disappeared or has changed for the better. In the latter case, the lesion will be found on thorough palpation to display some tenderness. When this has been abolished, the movements of the shoulder will be practically painless. Sometimes as much as 20 cubic centimetres of a 1 in 1,500 solution of "Percaine" or a 1 in 200 solution of "Novocain" is necessary. The injection often is painful, and the patient will frequently faint if he is not made to lie down beforehand.

During the period under review, about ten cases were encountered in which infiltration proved unsuccessful after a prolonged trial. My impression now is that, if no alteration in the symptoms occurs after two thorough infiltrations, further perseverance will prove ineffective.

In two of the unsuccessful cases the shoulder disability was part only of chronic generalized arthritic changes of long duration. In one of these the shoulder pain was abolished for the duration of the analgesia. A third was associated with multiple arthralgia of one year's duration, following cerebro-spinal meningitis.

In two further cases evidence of old-standing degenerative change was seen in the loss of the tendon of the long head of the biceps. In one case profound muscular wasting with periarticular adhesions was present. In the majority of the failures crepitus was detected, indicating a certain degree of anatomical change. However, in several of the successful cases this sign was present; it can frequently be detected in "normal" shoulders. As is usual with this complaint, in some of the "unsuccessful" cases recovery occurred in due course (in two immobilization on an abduction splint was necessary); but the mere fact of eventual cure does not bring them within the scope of this paper.

Brachial Neuritis.

I have mentioned that in some cases the pain was felt from the neck region to the fingertips. These cases appear to be naturally divided into two groups: (i) Those in which the usual shoulder syndrome is present, but an additional lesion is present in the forearm (Case VIII). Two cases of this type were encountered. These have already been considered. A similar instance is Case IX of my previous paper. (ii) Those in which neuralgic pain, independent of shoulder movements, is felt in the whole arm. It is usually found that the area of maximum tenderness is in the region of the seventh cervical or the upper three dorsal spines. In some of these cases pain is felt on neck movements, and it would seem that the lesion is situated beneath the trapezius in the splenius muscle. The tips of the spines may be excessively tender, but the infiltration should be made in the soft tissues close to the spine.

Case IX.—A woman, aged seventy-six years, complained of severe pain in the right arm. She had suffered intermittently for years, but for three weeks she had had agonizing pain, necessitating many injections of morphine. The pain was not made worse by movement; it seemed to shoot from a very tender *vertebra prominens* to the finger tips (Figure I, D). The soft tissues around were tender. Those on the right side were widely infiltrated (Figure I, E); no improvement was manifest. Two days later the tissues close to the spine were infiltrated. She was then completely free from pain for three weeks. A return of the pain then necessitated a further infiltration, as a result of which there has so far (ten weeks later) been no return of the pain.

Case X.—C., a private soldier, was sent back from abroad with a diagnosis of osteoarthritis of the cervical portion of the spine. He had severe pain in the left side of the neck, shooting up to the occipital region and down to the fingers. A tender spot just to the left of the *vertebra prominens* was infiltrated. His pain was relieved. A month later he complained of a mild return of the pain. Infiltration of the same spot gave complete relief, and a medical board has recently classified him as fit for duty. The skiagram revealed no arthritic change.

Discussion.

It may be contended with justice that the foregoing observations throw some new light upon the painful shoulder. Many of those (including myself) who have followed in the wake of Lewis (1938) and Kellgren (1938) have confirmed and amplified their observations relating

to muscular pain in general (Copeman and Burt; Buckley; Harman and Young; Button; Good). As a rule the signs and symptoms of fibrositis in general are pain and tenderness referred from a small lesion, which can be recognized as a circumscribed area of tenderness in muscular tissue. The tenderness may be referred some distance away, and is more likely to be situated over bony points or ligaments, while the pain is frequently referred to joints. The referred tenderness is often more acute than that of the lesion. Thus the observations described above correspond with similar observations upon fibrositis in other parts of the body, and suggest that in many cases of shoulder disability the signs and symptoms are secondary to a muscular lesion in or beneath the trapezius muscle.

The painful shoulder has until recently received remarkably little attention from the teachers of medicine. E. A. Codman (1937) has paid tribute to the work of the anatomist, J. S. Smith, who a century ago described many of the lesions of the shoulder joint. Douthwaite (1938) recalls the work of Duplay, who described in 1872 a post-mortem examination in a case of periarthritis of the shoulder.

Many writers, including Duplay, Sir Robert Jones (1923) and Watson Jones (1938), fall into the error of attributing all shoulder lesions directly to trauma. Some writers speak only of the "stubbed shoulder", and even Codman (1934) apportions to injury too large a part in its causation. Abercrombie (1938) and Douthwaite, however, have recently drawn attention to the fact that there is a history of trauma in less than half of the cases.

Sir Robert Jones divides shoulder lesions into "sprain" (acute type) and "periarthritis" (chronic type), with the intermediate "painful arm following a sprain", in which movement is limited and the symptoms are wholly out of proportion to the cause. In these cases he observed that the muscles at the root of the neck were often tender. Most English writers, including those already mentioned, follow Jones in his treatment, which amounts in brief to immobilization on an abduction splint until all pain on movement has subsided, followed by manipulation (if adhesions have formed) and active movements.

Codman and His School.

In the United States of America a school has arisen in the wake of E. A. Codman (1934), who discovered that the tendon of the supraspinatus was frequently ruptured in shoulder injuries. The same school attributes considerable significance to the presence or absence of calcified deposits in the supraspinatus tendon. The fact that in the vast majority of cases the supraspinatus tendon is neither ruptured nor the site of deposits is ignored, and a great deal of space is devoted to describing operative procedures to remedy these. But Keyes (1935) and others (including Codman himself) have shown that rupture of the supraspinatus is found in more than 20% of subjects dead from the common diseases of old age, and Bosworth (1941) has shown that calcification is found in the region of the shoulder in 2·7% of normal people. Therefore we are grateful to Skinner (1937) for pointing out that these abnormalities of the supraspinatus tendon are only part of a progressive disturbance which involves other structures. "Thus", he states, "it is not surprising to find several aspects of the same condition (rupture of the tendon, subacromial bursitis, disappearance of the tendon of the long head of the biceps, calcification in the supraspinatus tendon) described by different authors under different headings." Douthwaite considers that calcification represents merely a late effect of chronic inflammation.

As is usual when directly opposing viewpoints are taken, it is probable that the truth lies somewhere between the two extremes. The tissues between the head of the humerus and the acromion are remarkably subject to attrition, and it is not surprising that degenerative changes should be found in the tendon of the supraspinatus. It is not surprising either that calcium salts should be deposited occasionally in these degenerated tissues. The presence of calcification would then render the shoulder somewhat more liable to a painful lesion, and once the lesion was established, would tend to delay its recovery.

A weakened supraspinatus tendon would be more liable to rupture or injury on strenuous effort. But there seems to be no scientific proof of the contentions of Codman and others that an intact supraspinatus is essential for abduction of the shoulder, or that an old rupture of the tendon should of itself be more likely to cause intractable pain than an old rupture of a tendon anywhere else.

Many years ago it was fashionable to lay blame for shoulder pain upon the tendon of the long head of the biceps, which, it was held, was the subject of degeneration, rupture or tenosynovitis. These pathological changes have been "rediscovered" by Gilcreest (1934) and Schrager (1938), who appear to attach undue importance to them. A. W. Meyer (1931, 1937) has for two decades been a recognized authority upon the subject of attrition, especially as exemplified in the shoulder; and he has written several papers concerned with attrition changes in this tendon.

"Brachial Neuritis".—The combination of tender spinous processes with neuralgic pain down the arm reminds one that Steinbrocker (1940) and Codman are of the opinion that osteoarthritis of the spine is a common cause of disabled shoulders. Many other writers mention cervical spondylitis and arthritis of the costo-vertebral joints. Steindler (1940) considers that brachial neuritis is due to an extension of the fibrositic process from the region of the subacromial bursa to the brachial plexus. In this connexion it is interesting to recall the opposed contention of Gowers (1904) that brachial neuritis was often wholly muscular and sometimes extended to the capsule of the joint. Stockman (1940) recently stated that "brachialgia" was due to sensitive spots in muscles, which could be cured by firm massage. Robert Jones noticed the tenderness in the trapezius muscle, and Ray (1934) held that fibrositis in the supraspinatus muscle was capable of giving rise to pain down the arm and tingling in the fingers. Codman emphatically denies that brachial neuritis is a clinical entity, and accuses its users of employing the term as a cloak for ignorance. His respect for such terms as "rheumatic shoulder" is even less. My limited experience suggests that the cases in which there is no limitation or pain on movement can be sharply differentiated from the cases of true shoulder disability. Further investigation in this field is necessary.

Treatment.

Local anæsthesia is both an instrument of research and a therapeutic weapon. The persistence of the cure into the post-anæsthetic stage has not yet been satisfactorily explained. Suffice to say at this stage that a focus of irritation causes by reflex action pain and tenderness in the region of a joint, and that the disintegration of this focus is followed by cure.

Local anæsthesia for painful shoulders has been recommended by N. J. Howard (1938), Watson Jones (1938), Harman (1940), Steinbrocker (1940), Button (1940), Good (1941) and Russell Howard (1941). Codman himself (1938) has also praised the method. As most of these workers recommend infiltration of the tender areas over the head of the humerus, there is no doubt that disappointment must often be their lot. Most of them speak of severe reactions and repeated injections. Codman states that local anæsthesia is good only in acute cases. In the majority of acute cases, however, recovery occurs quickly without treatment. Ferguson (1938), whose exhaustive review bears the stamp of authority, states that local anæsthesia is successful in acute cases only, and not in chronic cases. He mentions large amounts of anæsthetic agents, as much as 50 cubic centimetres, being injected beneath the acromion, and he states that the process is so painful that it must be carried out under general or regional anæsthesia.

It seems to be generally agreed that, with or without treatment, eventual recovery is the rule after months or years. Codman states that, while even in the worst cases of frozen shoulder recovery occurs with little disability, recovery without operation cannot be expected when the tendon has ruptured. His opinions regarding peri-

arthritis are supported by Dickson and Crosby (1932), who reviewed 200 cases, and by Rogers (1934), who studied 100 cases; but Douthwaite is emphatic that periarthritis has no tendency towards spontaneous recovery, and that manipulation is necessary to break down adhesions. Here again the truth probably lies somewhere between the two extremes, and the sound conservatism of Robert Jones is to be recommended. His procedure is as follows: (i) Immobilize the joint in abduction until the inflammatory reaction has subsided. (ii) Manipulate the joint to break down adhesions (if any). (iii) Institute reeducative exercises when movements are freed.

Exercises in the presence of pain, as practised by many authorities, do little good, and the various forms of heat therapy are merely palliative. In less severe cases with no tendency to adhesions, it is often impracticable to immobilize the joint, and the patient makes a slow recovery after suffering considerable discomfort. Patterson and Darragh (1937) and Wilson (1939) have recommended irrigation of the subacromial bursa. Under local anæsthesia the calcified deposits can be washed out through a wide-bore needle. Here again Codman, after reviewing the subject, said that the method was good in acute cases only. It appears to me that the disappearance of the deposits would be due to the resultant hyperæmia and absorption rather than to physical means. Deposits have frequently been observed to absorb spontaneously within a short time (Bosworth, Codman *et cetera*). Patterson and Darragh state that the method is equally good in the absence of calcification, when gelatinous material comes through the needle. But one's sense of proportion is restored on hearing that Milgram (quoted by Wilson) has obtained equally good results by simple puncture with a needle.

Nearly all the authorities agree that operation to remove calcified deposits is a certain method of cure. But Wilson holds that it is of value only in the acute type of case, and, moreover, the deposits are not common enough to be of great importance. McDonald (1940) recently recommended this procedure, but he did not state that he had used the method. He appears to be satisfied with the rest upon an abduction splint, which, he holds, gives immediate relief from pain.

The Nature of Fibrositis.

The successful results described should not be surprising in view of the previous researches into the nature of fibrositis. The painful symptoms as a rule represent the reflex effect of stimulation of a distant focus, which is usually situated in muscular tissue. The tenderness is the result of the liberation from the tissues of a substance which renders them more sensitive. Lewis likens this to a process of secretion. Most of Lewis's work upon nocifensor or trophic nerves dealt with hyperalgesia of the skin; but the analogy in the case of the deeper tissues is clear. (i) In the skin, a crush injury causes a spreading zone of hyperalgesia, which is associated with hyperæmia. (ii) Antidromic stimulation of a sensory cutaneous nerve (that is, stimulation in such a manner that the impulses travel in a peripheral direction) also causes hyperalgesia and hyperæmia throughout its distribution. (iii) In an animal, antidromic stimulation of a sensory nerve trunk causes the limb to swell through vasodilatation in the muscles (Wright, 1936). (iv) In the case of fibrositis, pain is associated with tenderness of the deeper structures, and frequently also with swelling of the tissues that are tender. (v) This deep tenderness can be abolished by local anæsthetization of a distant focus. (vi) Therefore the symptoms of fibrositis are in large measure due to a nocifensor or trophic nervous reflex.

Conclusions.

1. The syndrome known as the painful shoulder presents a remarkably constant clinical picture, no matter what the immediate cause.

2. In a number of cases of shoulder disability the pain, tenderness and limitation of mobility were abolished by infiltration with a local anæsthetic certain tender areas in or beneath the trapezius muscle. In the majority of cases the relief was permanent.

3. The cases of shoulder disability can be clearly differentiated from those presenting the picture of brachial neuritis.

4. The apparent disagreement between the various authorities upon the nature and treatment of the disability serves but to emphasize the essential oneness of the syndrome, in which a progressive disturbance involving several structures presents different aspects to different observers.

5. The foregoing observations are in line with recent researches on fibrositis, and emphasis is laid on the important part played by the trophic nervous reflex in its symptomatology.

Acknowledgements.

I wish to thank Mr. McKellar Hall, of the Orthopædic Department, Perth Hospital, and Lieutenant-Colonel A. R. Vickers, commanding officer of an Australian general hospital, for placing clinical material at my disposal.

Addendum.

Since this paper was written observations have been completed on a further series of eight cases of painful shoulder. Complete cure has resulted in five cases after one to three injections. In the three others the disability could be made to disappear for the duration of the analgesia.

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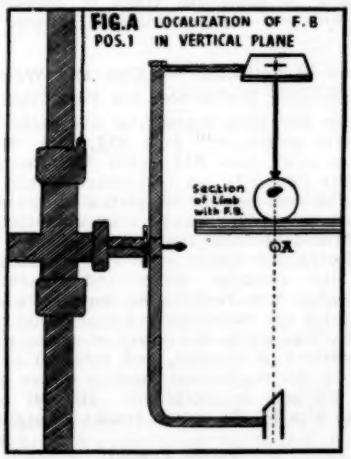
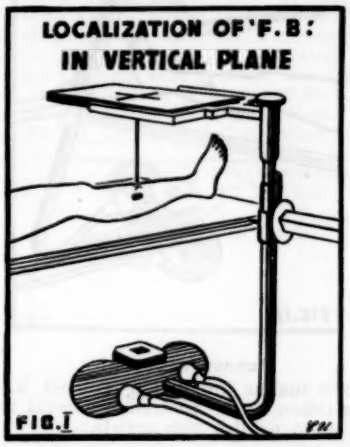
A NEW METHOD OF RADIOLOGICAL LOCALIZATION OF FOREIGN BODIES.

By T. L. TYRER,
Major, Australian Army Medical Corps, Australian Imperial Force,
WITH AN ADDENDUM BY
C. W. B. LITTLEJOHN,
Lieutenant-Colonel, Australian Army Medical Corps, Australian Imperial Force.

A NEW device for the localization of radio-opaque foreign bodies has recently been perfected by Mr. B. H. Crook, of Ultray's Proprietary Limited, Melbourne, Australia. This device is now issued as a standard accessory to be used with the X-ray apparatus supplied to medical units of the Australian Imperial Force overseas. Localization with this apparatus is simplicity itself, and has proved a great advance on older methods, both in accuracy and speed. Its assistance is invaluable, especially in forward areas, where the demands for localization of foreign bodies in patients being dealt with by several surgical teams are being met by the one radiological unit.



The feature of this device is that the tube and screen move synchronously on a common arm. The patient lies on the X-ray table with the part to be examined immobilized. The tube-arm is then adjusted so that the anode, foreign body and cross-wires in the centre of the screen are in a vertical line (Figure A). The arm is now locked. A frame is then fitted to the under side of the screen. This carries, at its centre, a skin pencil which is so placed that it is situated vertically beneath the centre of the cross-wires. The screen is then lowered until the pencil touches and marks the skin directly above the foreign body (Figure I). The pencil frame is now removed.



The tube and screen are then rotated through any convenient angle (in standard equipment 30°) and locked in this new position. The arm, carrying tube and screen, is now raised or lowered until the foreign body shadow is again centred on the cross-wires (Figure B). A pointer is

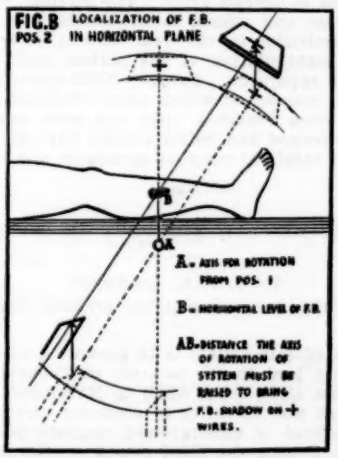


FIG.B LOCALIZATION OF F.B.
POS.2 IN HORIZONTAL PLANE
OA
A. AXIS FOR ROTATION FROM POS. 1
B. HORIZONTAL LEVEL OF F.B.
AB. DISTANCE THE AXIS OF ROTATION OF SYSTEM MUST BE RAISED TO BRING F.B. SHADOW ON + WIRES.

then pulled out from the centre of the arm, at right angles to its axis, until it touches and marks the skin at the horizontal level of the foreign body (Figure II).

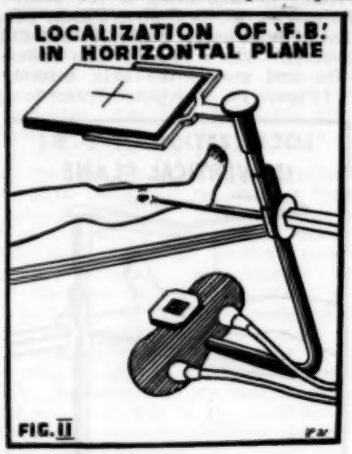
Since the foreign body lies at the right angle formed by the horizontal and vertical pointers, it requires a linear measurement only to determine its depth from either mark. No other calculation is required.

In a similar manner, any bony landmark may be localized, and the relationship of a foreign body to the landmark thus determined.

It is imperative that during these examinations no movement whatever of the part concerned should be permitted.

By cooperation between surgeon and radiologist, and the adoption of standard position on both the X-ray and operating tables, the foreign body is accurately and speedily located. The use of standard positions avoids confusion during busy periods, when the surgeon may not see the patient until he reaches the operating table.

By the use of this apparatus in a forward area during the past four months it has been possible to localize more than 4,000 foreign bodies. The accuracy of their localization has been demonstrated at subsequent operation.



Acknowledgement.

The author's thanks are due to Colonel N. L. Spiers, Commanding Officer of an Australian general hospital, for his permission to publish this article.

ADDENDUM.

(C. W. B. LITTLEJOHN.)

The general value of X-ray examination in forward area surgery is great, but the value of accurate localization of foreign bodies is beyond price. The method which Major Tyrer describes and which, in his hands, gives results of uncanny exactitude, is the best that I have seen. It involves no manipulation of the patient and a minimum movement of apparatus. In over 2,000 operations during the past four months, at which many thousands of foreign bodies have been removed, time has been saved, trauma has been minimized and better results have been obtained, owing to this excellent piece of apparatus and its operator.

A REGIMENTAL AID POST IN TOBRUK.

By S. J. M. GOULSTON,

Captain, Australian Army Medical Corps.

THE object of this article is to present a certain special regimental aid post in the fortress of Tobruk during the German-Italian siege from April to November, 1941. The perimeter area was 25 miles in diameter and the forward defences consisted of underground concrete posts built by the Italians. During the third attack on the perimeter on May 1, the enemy created a salient by which he obtained certain valuable high ground overlooking a considerable portion of that territory on the western perimeter. The area known as the "figtree area" stretched from the right flank of the salient to the right of the Derna Road. The battalion which I served as regimental medical officer occupied this important area on two occasions in June and September for two months. The method of caring for the sick and wounded, their evacuation, and the hygiene difficulties encountered form the subject matter of this article. Figure I is a map of the western perimeter and Figure II is a diagram of "Figtree Regimental Aid Post".

Description of Regimental Aid Post.

Site.

The regimental aid post was situated in a cave cunningly concealed beneath a very old figtree which formed a conspicuous landmark in an otherwise completely bare desert. Around the tree was an ancient Jewish cemetery, and the cave itself was thought to have been used as a burial ground. The cave was completely underground and consisted of three rooms, two of which were large and spacious and the third small and compact (see Figure II for a plan of the cave). The room marked "A" was about 20 feet by 15 feet in size with a ceiling six feet high, and was used as the medical inspection room and sleeping quarters of the regimental medical officer and padre. The room marked "B" was about 16 feet by 16 feet in size with a ceiling four feet high, and was used as a sick bay and sleeping quarters for the regimental aid post staff. The small room marked "C" formed a useful cookhouse and pantry. There were two entrances, the main one leading down to "A", the other to "B". There were two air holes in the centre of the cave, which were sufficiently lighted in the daytime to make artificial light unnecessary. At night, with several hurricane lamps, the interior of the cave resembled a scene from "Ali Baba and the Forty Thieves".

Position in Relation to Battalion Area.—As will be seen from the map, the regimental aid post was almost in the centre and about three-quarters of a mile to the rear of all forward posts occupied by the battalion; battalion headquarters was sited just in the rear of the regimental aid post. The area was on high ground, and immediately outside the cave one could obtain a good view of most of the battalion positions and of portion of the enemy on either side of the Derna Road. Unfortunately the figtree was directly under enemy observation from two points—(*a*) Hill 206, overlooking the salient, and (*b*) a place marked "X" on the diagram (Figure II) to the north of the Derna Road—and thus was a first-class target. As it was dangerous for trucks to be seen in the area, the regimental aid post truck and an ambulance were housed in a wadi some quarter of a mile behind the figtree, and four stretcher bearers were provided by the nearest field ambulance for the "carry" from the regimental aid post to the ambulance.

Advantages of the Site.—The site had five advantages: (*a*) It was in the centre of the battalion area, about equidistant from all company headquarters. (*b*) It was close to a "good" dirt track road, by means of which the truck could reach all company headquarters. (*c*) It was a roomy, well-protected site, capable of holding 25 to 30 wounded men. (*d*) A cookhouse was provided and a cook was on hand at the regimental aid post. (*e*) It was close to battalion headquarters and had direct telephonic communication with battalion headquarters and with all posts.

Disadvantages of Site.—The site had two disadvantages: (*a*) It was under enemy observation and shelling. (*b*) It was impossible to bring the truck or ambulance to the regimental aid post during daylight unless in extreme urgency.

Method of Collection of Sick and Wounded.

Forward Regimental Aid Post Sites.

Forward or advanced regimental aid posts were established at three points: (i) Post S12; (ii) "B" Company Headquarters, near Post S14; (iii) "C" Company Headquarters, near Post S23. A non-commissioned officer was in charge who was capable of giving morphine by injection. In each post there was at least one stretcher bearer who was trained to fulfil the double function of medical orderly and stretcher bearer. He was provided with a kit containing the common drugs and bandages. Each stretcher bearer was responsible for the prevention of sickness and for the collection and evacuation of sick from his post. He was given the power of acting as a medical officer in matters of hygiene, and referred everything of importance to the regimental medical officer at the main regimental aid post by telephone. His kit replacements were sent to him by the ration trucks at night.

Ration Trucks.

The method used for the disposal of sick and wounded was by means of ration trucks. After nightfall each

evening, company trucks at intervals of ten minutes called at the regimental aid post on their way to company headquarters. Dispatches, medical supplies and anything else which was to go to the companies were then loaded onto the trucks. On arrival at company headquarters the truck was unloaded and received sick and wounded men who had been conveyed to the headquarters by the stretcher bearers, delivering them to the main regimental aid post. Sick parades were then held between 2300 hours and 0200 hours, according to the arrival of the trucks. Whenever possible personnel were retained at the sick bay at the regimental aid post, where hot drinks, rest and treatment were given. Most of the patients during the hot month of June were suffering from enteritis or mild dysentery, and the use of a sick bay prevented too great a wastage of men, who were able to rejoin their platoon in two or three days. If he was wounded or very ill, the soldier was conveyed to the nearest dressing station by ambulance. It was comparatively safe to walk singly to each forward regimental aid post in daylight, and the regimental medical officer made it his job to visit some post every day.

The Regimental Aid Post Truck.

Although the regimental aid post was supplied with a thirty-hundredweight truck, it was found that a one-ton "Chevrolet" was of much greater use. This is more manœuvrable, and two stretchers can fit into the back of the vehicle. In case of emergency, when men were severely wounded during the day or night, this truck was sent forward flying a conspicuous flag to one of the forward regimental aid posts. On almost every occasion this truck was allowed to proceed on its way unassailed and the Red Cross flag was respected. It is interesting to note that on one occasion the truck was allowed to proceed unmolested, but as soon as it had left severe shelling was directed upon the company headquarters recently vacated by the truck—in other words, it gave away the position.

Summary.

To summarize the foregoing description: In every post was a stretcher bearer trained also as a medical orderly. At three points were forward regimental aid posts manned by a non-commissioned officer orderly, who was more experienced than his fellows in the post, and who decided whether an allegedly sick man would be sent to the main regimental aid post or return to his section. The ration trucks collected the sick men at night and conveyed them to the main regimental aid post, where they were either admitted to the sick bay or transferred to the nearest field ambulance. During the day or other periods of the night, wounded were collected by the regimental aid post truck or carried by a party of stretcher bearers.

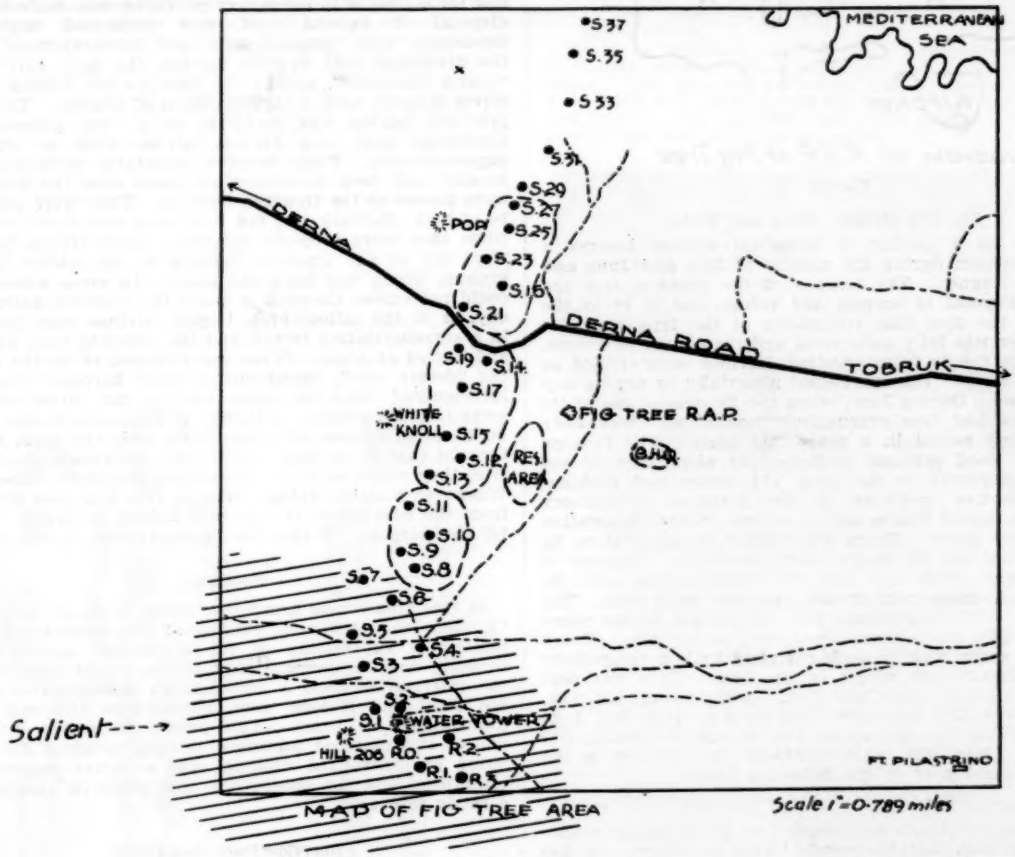


FIGURE I.

Method of Maintaining Hygiene.

The main difficulties encountered in the maintenance of hygiene were: (i) lack of water; (ii) the fly and flea menace, and ticks; (iii) the disposal of excreta and refuse; (iv) cooking; (v) boredom and inactivity.

Lack of Water.

Water was always a valuable commodity in Tobruk and therefore was strictly rationed; from one-half to one gallon per man was allowed for drinking, cooking and washing purposes. A soldier in the line had to wash, clean his teeth, quench his thirst and perhaps shave on one water bottle per day. This lack of water for washing was offset

by the following measures: (*a*) sea bathing when out of the line; (*b*) transportation of sea water in oil drums to forward posts; (*c*) small company distillery plants, which yielded about 80 to 100 gallons of fresh water per day; (*d*) exposure of the body to the sun, and the use of sand and wood ash to clean dixies *et cetera*. These practices were sufficiently successful to keep the incidence of lice, scabies *et cetera* down to a minimum.

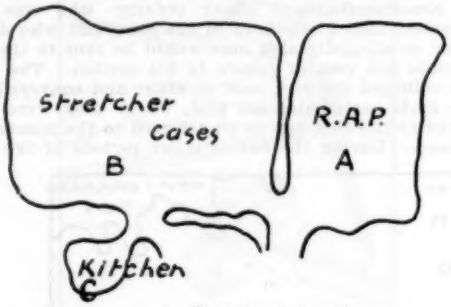


Diagram of R.A.P. at Fig Tree

FIGURE II.

The Fly Menace, Fleas and Ticks.

The fly as a carrier of intestinal disease became a serious problem during the months of May and June and again in August. The essence of the problem was the efficient disposal of excreta and refuse, and it is to the credit of the men that realization of the importance of this matter was fully understood and the danger overcome. To prevent the fly from breeding, latrines were erected as described below. The sun helped materially by drying any stray refuse. During June, when the fly season was at its height, we had less evacuations (excluding wounded) than at any period in a peace-time camp. The reasons were (*a*) good personal hygiene, (*b*) abundance of sea water transported to the men, (*c*) centralized cooking, (*d*) preventive medicine, in the form of compulsory administration of Epsom salt, *et cetera*. Another innovation was the fly spray. There was plenty of material to be sprayed, but no fly sprays were available. Number 5 platoon was given the task of extemporizing and fly sprays were made from grease guns and milk cans. The one given to the regimental aid post, graced by the name of "Mark 14", was a tremendous boon in the cave. Every five days every man in each company took a compulsory dose of Epsom salt whilst in the line. This was sent out in two gallon water tins from the regimental aid post. What results this preventive treatment actually had I do not know; but the men appreciated it, and it certainly did no harm. Men with mild diarrhœa were treated in the regimental aid post on the following lines:

First day:

Nothing by mouth for twenty-four hours except fluids.
Epsom salt, half teaspoonful every two hours for five doses.
Tablets of Dover's powder, 10 grains, at night.

Second day:

Semi-solids by mouth.
Mistura Bismuthi cum Opio, half an ounce, three times in the day.

Third day:

Return to post by ration truck at night.

If there was no improvement after forty-eight hours, or if the stools contained blood or mucus, the men were transferred to the nearest field ambulance. As there was a good supply of water at the regimental aid post, opportunities were given to these men to shave, wash their clothes *et cetera*. Besides this, a generous supply of medical comforts in the form of soup, beef tea, tinned fruit, extra tea and coffee, cigarettes and brandy contributed to the comfort of the men.

Considerable discomfort was caused to the troops in the area living in caves because of fleas and ticks. These included signallers, intelligence staff, medical personnel and most of battalion headquarters' staff. These caves were heavily infested with fleas and ticks, and strong counter-measures were taken to keep them down by cleansing and by the liberal use of flea powder and disinfectant. The prevalence of relapsing fever and what was thought to be a type of scrub typhus was attributed to the ticks in the district.

Disposal of Excreta and Refuse.

The disposal of excreta and refuse was the most serious problem for the garrison. The Italians have a very poor idea of hygiene and left the perimeter a veritable breeding-ground for vermin. We hurriedly took over the posts, and for a time only temporary provision was made for the disposal of excreta, and men defæcated anywhere. Gradually, with splendid help and encouragement from the divisional field hygiene section, the men were made "health conscious", and by the time we left Tobruk themselves insisted upon a high standard of hygiene. The most practical latrine was found to be a cross between the superficial and deep trench latrine with an efficient superstructure. These wooden structures were scattered in ones and twos in convenient spots over the area and were moved as the trenches filled up. They were found to be of high efficiency, and few flies were seen in the vicinity when they were properly installed. Deep trench latrines were out of the question because of the nature of the ground, which was hard and stony. In areas where men could not expose themselves above the trenches during the day, as in the salient area, bucket latrines were installed in a communicating trench and the contents were emptied and buried at night. Urine was disposed of by the use of the "desert rose", consisting of three kerosene tins, one incorporated into the other end to end, urine soaking away into the ground. Although it was realized that it did no harm to dispose of urine freely over the area, it was thought that if the men were taught to urinate at selected sites they would be better disciplined regarding defæcation. Whenever possible, refuse—that is, tins and food left over from the cooking *et cetera*—was burned in areas allotted for the purpose. If this was impracticable, it was buried.

Cooking.

In this area it was found convenient to do all cooking at "B" echelon. A central cookhouse was established there under the supervision of the regimental quartermaster sergeant and the sergeant cook, and as far as possible with the material at hand a varied menu was prepared and a hot meal and rations were delivered to the men after nightfall in hot boxes. This proved successful, although one or two platoons preferred to cook locally. The main value of centralized cooking was a better standard of cleanliness and the supervision that could be exercised in a fairly safe area.

Boredom and Inactivity.

Besides the enemy and the fly, heat and dust-storm menaces, boredom and inactivity were the chief troubles. Men moved about in a small area for weeks on end living vegetative lives punctuated by moments of fear. To counter this, over the whole perimeter active reconnaissance and fighting patrols were instituted, which gave to the defenders the initiative and the feeling that they were superior to and could hit back at the enemy. This was a big contributing factor to the high morale which existed throughout the siege.

Summary.

A description is given of a regimental aid post in a forward area of Tobruk during the siege of 1941, including the treatment and collection of sick and wounded. A brief outline is given of the hygiene difficulties encountered and how they were overcome.

Reports of Cases.

PRECOCIOUS PUBERTY.

By REGINALD BRIDGE and ARCHIBALD C. TELFER,
From the Department of Urology, Sydney Hospital.

Clinical Record.

A MALE patient, aged five years and two months, was referred to one of us (R.H.B.) by Dr. Clifton Walker, of Rose Bay. The mother brought him to Dr. Walker because she noticed the growth of pubic hair and the appearance of a slight moustache. On being questioned, the mother said that the child had seemed to her bigger than other children almost from birth, and that she had noted his rapid general muscular development. His physical attainments and capabilities were far in excess of his contemporaries. This was very noticeable when he was at play with other children of similar age. The child seemed to her in every other way normal, but she thought he was always thirsty.

The boy was an only child, and the mother's pregnancy, confinement and puerperium were normal. The father's age was thirty-seven years and the mother's thirty-five at the time of his birth. There was no family history on either side of anything relating to possible glandular dystrophy. The child's weight at birth was seven and a quarter pounds, and he appeared to grow abnormally fast immediately.

His measurements at the age of three years and seven months were as follows: weight 51 pounds (normal 33 pounds 12 ounces); chest measurement 20 inches; head circumference 20 inches; height forty-two inches (normal 38·625 inches).

On examination the patient was a fine physical specimen of a boy, aged approximately nine or ten years. He had well-developed muscles everywhere (see Figures I and II). There

FIGURE I.
The patient (on the right) compared with a child of the same age.

FIGURE II.

was slight acne of the face and a fine down had appeared on the upper lip. He had a large nose, which the mother says is not like any of the family. His measurements were as follows: weight 68 pounds 4 ounces (normal for age 41 pounds 2 ounces); height 47·5 inches (normal for age 41·6 inches); chest measurement 31·5 inches; circumference of abdomen at umbilicus 24 inches; head circumference 20·5 inches; symphysis to toes 20·5 inches; symphysis to vertex 25 inches; symphysis to *manubrium sterni* 14·5 inches; span 6·5 inches. There was a sparse growth of pubic hair and the penis was the penis of puberty (see Figure III). The testicles were normal and the prostate gland was palpable but not enlarged.

Examination revealed no abnormality in the thorax. The apex beat of the heart was 2·5 inches from the mid-line in the sixth intercostal space. The blood pressure was 90 millimetres of mercury systolic and 44 diastolic; the pulse rate was 84 per minute. No tumours were palpable in the abdomen and the cranial neurological examination revealed no abnormality.

Dr. Godfrey Appel's ophthalmological report reads as follows:

> Briefly, there is no sign of any optic nerve or cortical lesion.
>
> Visual acuity was R. $^{6}/_{6}$, L. $^{6}/_{6}$.
>
> The peripheral fields satisfactorily taken show no restriction in either eye.
>
> Bjerrum screen test was most unsatisfactory. However, he seemed to have no scotomata at the macula or blind spot. Children of this age seldom give these subjective tests satisfactorily—indeed many adults do not either.
>
> The fundi were both normal. There was no papilliœdema.

Dr. D. G. Maitland reported that the appearances of the skull and pituitary fossa appeared to be within normal limits. The head of the radius and all the carpal bones were fairly well ossified with the exception of the navicular and lunate. The pisiform centre was visible. The child's osseous age was about eleven years.

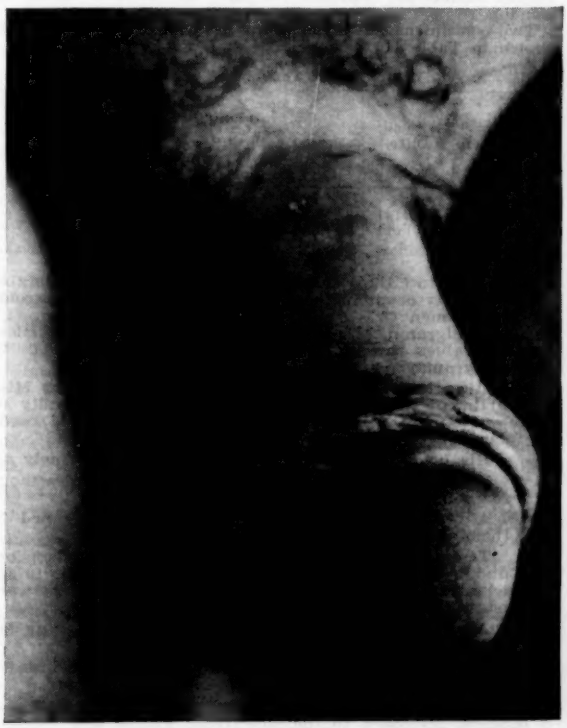


FIGURE III.
The penis, actual size.

Dr. Assheton-Chin reported that from radiographic evidence the stage of development of this child's teeth was equivalent to that of a child seven years old. A point to be noted is that, although the structural development of the teeth is as stated, the six-year molar has not yet shown any sign of erupting, so that the child is not precocious in times of eruption, although precocious in stage of development.

The boy's blood serum failed to react to the Wassermann test.

Biochemical tests were carried out by Dr. H. Wardlaw, of the Kanematsu Institute, with the following results: blood urea nitrogen content, 19 milligrammes per 100 millilitres; blood creatinine content, 1·0 milligramme per 100 millilitres; blood cholesterol content, 356 milligrammes per

100 millilitres of serum; blood chloride content, 346 milligrammes per 100 millilitres of blood; blood sodium content, 224 milligrammes per 100 millilitres of blood; serum sodium content, 323 milligrammes per 100 millilitres of blood.

The glucose tolerance test produced the results shown in Table I.

Table I.

Time.	Milligrammes of Glucose per 100 cubic centimetres.	Sugar in Urine.
Before administration of glucose	94	None
½ hour after	107	
1 hour after	131	None
1½ hours after	120	
2 hours after	117	None

The Aschheim-Zondek test produced no reaction.

The assay of 17-ketosteroids in the urine was carried out by Dr. V. Trikojus, of the University of Sydney. Ketosteroids in the urine were assayed colorimetrically with the Hilger Spekker absorptiometer, as described by Callow, Callow and Emmens (1938), and Callow, Callow, Emmens and Stroud (1939). The specimen of androsterone which served as standard was kindly supplied by the Department of Biological Standards, National Institute for Medical Research, London.

Two specimens of urine were assayed with the results shown in Table II.

Table II.

Specimen.	Date.	Period.	Volume (cubic centimetres).	Ketosteroids.	
				Milligrammes per Litre.	Milligrammes per Day.
A	18.8.41	24 hours	530	3·5	1·9
B	3.11.41	24 hours	690	1·8	1·2

According to Callow *et alii* (*loco citato*, 1939), considerable variation may occur in the daily excretion of 17-ketosteroids by normal men (3·5 to 15·0 milligrammes) and women (1·7 to 12·6 milligrammes). However, in cases of adrenal cortical tumour values ranging from 45 milligrammes per day to 280 milligrammes per day have been observed.

An estimation of the child's mental age was made by Miss L. Martin, of the Department of Psychology, University of Sydney; a part of her extensive report on the child reads as follows:

> His I.Q. was 127, which is high but not extremely so.
>
> He scores up to the 8 year level in vocabulary, memory for stories and verbal absurdities.
>
> A few tests were given at year 9 but he failed in them all.
>
> Tests involving the moral factors (comprehension, finding reasons, etc.) were given at various levels to see whether that trait had been developed, but none were passed after year 7.
>
> Altogether the child seems normal for his age as far as intellect and personality are concerned.
>
> I should say he is a good average boy in his interest and development.

In view of the lack of evidence of any intracranial lesion a bilateral approach to the suprarenal glands was thought justified. Young's bilateral approach was made under intratracheal anæsthesia (oxygen and ether with nitrous oxide), administered by Dr. L. V. Shea. Excellent exposure of both glands was obtained and they were found to be normal in both measurement and consistency. Both were approximately three centimetres in length and two centimetres in breadth. The left was much thinner than the right. Removal of a tumour of either suprarenal gland by this approach would have been easy.

The patient made an uninterrupted recovery from the operation. He is in fact now in the same position as when he first consulted his doctor.

Acknowledgements.

We are indebted to those people mentioned who have collaborated with us in the investigation of this boy, and to Mr. L. W. Appleby, of the photographic department of Sydney Hospital, for the photographs.

Reviews.

THE SULPHONAMIDES IN GENERAL PRACTICE.

It is now seven years since Gerhard Domaghk first told the scientific world about his biological experiments with a water-soluble basic azo dye known as sulphamido-chrysoidine, and familiar to us as "Prontosil". In mice and men this remarkable compound was found to have a protective and inhibitory action on the growth of virulent streptococcal organisms. Meanwhile a wide practical experience in the use of sulphanilamide and its allied compounds has been obtained from clinics in all parts of the world, and consequently a vast amount of literature on the subject has accumulated.

A broad summary of these important advances in medical science has been given by Dr. Wesley W. Spink in a small book compiled for the special benefit of the general practitioner.[1] Here the reader will find a great deal of valuable information about the sulphonamide compounds already in constant use, and something about the compounds whose clinical reputation is not yet fully established; it should help him to decide upon the particular drug to be most usefully employed in each individual case, to determine the correct dosage to be prescribed, and how to evaluate the different signs or symptoms of intolerance should any appear in the course of treatment.

Some earnest critics have complained of the tendency to employ these costly therapeutic agents in a rather loose and haphazard manner. They say that doctors give them to their patients without heed to the necessity of a quantitative estimate of their concentration in the blood, and without first taking the trouble to identify the causal organism; that doctors are apt to pin too much faith on their potentiality to effect a complete cure in the Neisserian infections to the exclusion of all local treatment where it has proved satisfactory in the past. If perchance there should be some justification for criticism in these respects, the position might be carefully reconsidered in the light of a wealth of authoritative information such as is contained within the two hundred odd pages of this comprehensive volume.

DISEASES OF THE NERVOUS SYSTEM.

It is most pleasing to find that "Diseases of the Nervous System", by F. M. R. Walshe, has so soon achieved a second edition.[2]

This book well fulfils its purpose, that of meeting the long-felt need of the general practitioner and student for a simplified approach to the subject of neurology.

The treatment of certain subjects which had been curtailed in the first edition by desire for conciseness and brevity has been given more space. A statement about the tissue reactions of the nervous system has been added to Part I as well as some amplification of the section dealing with the organization and symptomatology of the sensory, visual and speech functions.

In Part II the chapter on intracranial tumour has been partly recast, pituitary diseases have been given slightly fuller treatment, while additions have been made to the chapters on acute infections of the nervous system, head and spinal injuries and pain lesions of the spinal nerves.

The last chapter on psychoneuroses has not been altered. We cannot altogether agree with some of the opinions expressed in this section, particularly in regard to ætiology and treatment.

This very excellent book provides a simplified approach to neurology for the student and practitioner, and as an introduction to clinical neurology it has few equals.

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[1] "Sulfanilamide and Related Compounds in General Practice", by W. W. Spink, M.D.; 1941. Chicago: The Year Book Publishers Incorporated. Demy 8vo, pp. 256, with diagrams. Price: $3.00 net.

[2] "Diseases of the Nervous System Described for Practitioners and Students", by F. M. R. Walshe, O.B.E., M.D., D.Sc., F.R.C.P.; Second Edition; 1941. Edinburgh: E. and S. Livingstone. Demy 8vo, pp. 341, with illustrations and diagrams. Price: 12s. 6d. net.

The Medical Journal of Australia

SATURDAY, APRIL 25, 1942.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given without abbreviation: Initials of author, surname of author, full title of article, name of journal, volume, full date (month, day and year), number of the first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors who are not accustomed to preparing drawings or photographic prints for reproduction are invited to seek the advice of the Editor.

A WELCOME TO AMERICAN DOCTORS.

AUSTRALIANS in every part of the Commonwealth have been encouraged and strengthened in their resolution to bring defeat upon the enemy by the news that members of the American armed forces are arriving in this country in considerable numbers. Americans have been schooled in the same tradition as ourselves, they speak the same language, have the same love of freedom and the same purpose for the future. Every American unit has its medical personnel and American doctors share with Australian doctors the same ideals in science and the practice of medicine. In the name of the medical profession of Australia we welcome to our shores the medical officers of America's fighting forces. Among the medical officers of the Royal Australian Navy, of the Australian Army Medical Corps and of the Royal Australian Air Force and among civilian medical practitioners the Americans will find comrades and collaborators.

THE REPORT OF THE JOINT PARLIAMENTARY COMMITTEE ON WIRELESS BROADCASTING.

ON July 3, 1941, the Federal Parliament appointed a joint committee of both Houses to inquire into and report upon wireless broadcasting within and from Australia. The terms of reference were as follow:

1. Should any and what change be made in the existing laws and practice relating to the control of broadcasting?
2. Are the services now provided by the Australian Broadcasting Commission and commercial broadcasting stations adequate, and, if not, in what respects should they be improved?
3. Should any, and, if so, what, improvement be made in the wireless broadcasting of news within and from the Commonwealth?

Senator the Honourable William Gerrand Gibson was chairman and the Honourable Sir Charles William Clanan Marr was deputy chairman; the members were Senator Stanley Kerin Amour, Mr. Arthur Augustus Calwell, Dr. A. Grenfell Price and Mr. William James Frederick Riordan. The committee's report which was tabled in the House some weeks ago has been printed; it is an interesting document covering, with its 18 appendices, 115 foolscap pages. Wireless broadcasting is an integral part of modern life, and A. T. Marshall declares in his brochure "Australia Limited" that the Australian is an insatiable radio "fan". This is probably true and it has been estimated that about one Australian in five has a radio. Man is influenced by what he hears almost as much as by what he sees, and it is therefore important that a wise use should be made of the radio. This statement obviously applies to the broadcaster as well as to the listener. Marshall writes that "from the time our children's minds begin to function they are plagued with the incessant clamour of cheap canned music, wise-cracking announcers, and the fictitious claims of advertisements which are often read in chorus or in duet in order to din them more permanently into their consciousness". A listener's choice may be ever so wise and his pursuit of what is worth while ever so keen, but they will profit him nothing if his choice is limited to the cheap, the nasty and the untruthful. Marshall's indictment is not true of all Australian broadcasting stations. Be that as it may, the work of the parliamentary joint committee will not have been in vain if it effects an improvement in the Australian broadcasting services.

Medicine is interested in broadcasting chiefly because by its means the public can be given instruction in personal hygiene and taught something about the principles of preventive medicine. Doctors also value the broadcasting services because of their influence in education and in the dissemination of culture. Even news becomes important from the point of view of the medical practitioner when statements are taken from this journal or from medical journals published overseas and broadcast as news. On previous occasions we have reviewed the efforts of the medical profession in the several States, chiefly through the Branches of the British Medical Association, to give instruction over the air in matters pertaining to health. These efforts were more extensive than many people imagined even before the inauguration of regular talks over the national network by the "B.M.A. Spokesman". It is therefore surprising to find that so few medical practitioners gave evidence before the parliamentary committee. Only four medical names appear in the list of witnesses. The Director-General of Health and Quarantine gave evidence and also one member of the British Medical Association in Sydney. Of the other two medical witnesses, one appeared as chairman of an orchestral committee and the other is a member of the Australian Broadcasting Commission's staff. The subject of health talks appears twice in the report—once in the section devoted to the national service and once in that concerned with the commercial services. In the first appreciative reference is made to the work of the Department of Medical Sociology and Research of the New South Wales Branch—the talks are described as well authenticated and as carrying the approval of the Association. The committee also adds: "We feel that the work of the British Medical Association in popularizing knowledge of preventive and curative medicine and in promoting national fitness through physical well-being is worthy of commendation." In regard to health talks from commercial stations, some interesting statements are made. It appears that as long ago as August, 1932, the Postmaster-General's Department issued

a circular stating that it (the department) looked to the good sense and judgement of station managers to see to it that in regard to health talks or advertising relating to physical ailments exceptional care would be exercised prior to transmission to ensure that no cause for complaint should exist. We fear that the station managers' "good sense and judgement" very often led them astray. Anyhow, in June, 1940, the Australian Federation of Commercial Broadcasting Stations issued a statement of standards of advertising practice which had been adopted by the Commercial Radio Advertising Board. This standard which is published as a supplement to the report is in many respects excellent. The committee, however, points out that in spite of the departmental circular and the standards of advertising practice, "there is much cause for justifiable complaint about the manner in which false pseudo-scientific statements are broadcast for the purpose of exploiting the credulity of the sick and suffering". Equally reprehensible in the committee's opinion are attempts to foster the sale of certain patent medicines and other concoctions at a price many times the cost of production. "These mixtures are frequently valueless, but reap rich rewards for those who made them." The committee is satisfied that the only way to prevent a state of affairs " which at the very best borders on the scandalous and at the worst is cruel and heartless", is to require any person who desires to advertise any patent medicine to submit for approval for broadcasting all matter relating to it to the Director-General of Health at Canberra or to any State Department of Health, named by him. The committee also recommends that all medical talks, other than those sponsored by reputable medical or other scientific authorities, should be subject to a similar censorship. The committee further thinks that if any person feels aggrieved at any decision of the Director-General of Health or his deputies, there should be an appeal to the minister whose decision should be final. After showing such wisdom the committee adds the following surprising sentence: "In making this recommendation we desire to point out that certain unregistered health practitioners, such as osteopaths, have sometimes been in advance of medical practice, and we recommend that there be no prohibition of advertisements by chiropractors, osteopaths and similar practitioners unless their work is prohibited by legislation." There is nothing to show whether the advertisements of these people should in the committee's opinion be submitted to censorship—or their talks either, for it is impossible to imagine their advertisements apart from a "talk". As a matter of fact this reactionary view taken by the committee gives such enormous scope for discussion that we must content ourselves with pointing out that it is at variance with other views expressed by the committee and that the harm which would inevitably follow its adoption would more than outweigh any possible addition to knowledge by the persons mentioned in it.

Among the committee's other recommendations are two to which attention must be drawn. The first is that the Australian Broadcasting Commission's Federal Education Broadcasts Committee should examine the question of securing a fund for research work in school broadcasts. In remote parts of Australia many isolated homes are registered with correspondence schools. Broadcasting is a valuable method of reaching children in these places. "The radio is the only method by which such things as the sounds used in the early stages of reading and the correct pronunciation of difficult English words and of foreign languages can be brought to such pupils." The committee accepted the view of experts that research was required so that the needs of Australia in this regard could be met. It may not be the function of a broadcasting commission to finance such research, but it is to be hoped that the committee's recommendation will be adopted. The second of the remaining recommendations is that the possibility of using *The A.B.C. Weekly* for the commission's educational activities should be explored. With this we entirely agree; we have on a previous occasion urged the wider use of the commission's journal for the publication of health talks.

The report of the parliamentary joint committee is, as we have tried to show, a document which merits careful study. We trust that the Australian Broadcasting Commission itself will see to it that the report is not lost in a parliamentary pigeon hole at Canberra.

Current Comment.

CHEST INJURIES AND RADIOLOGICAL EXAMINATION.

EVEN that hypothetical person the man in the street knows that X-ray examination is essential to the adequate treatment of war casualties, whether the wounds are caused by battle or by air raids on a civilian community. It is for the medical practitioner to know when diagnostic exposure to the X rays can be of most use, and it is equally important that he should know the limitations of the method. Each region of the body presents its own peculiar problems when it has received a war injury. Thus the surgeon who has to deal with head injuries needs to be specially skilled in operating on the skull and the brain tissues, the surgeon treating wounds of the chest has to be no wit less expert than the thoracic surgeon of civil practice, and the same kind of statement holds good for surgeons charged with the care of fractures or of patients with wounds of the abdomen. If the best results are to be obtained in any of these special spheres of war surgery, X-ray examination must be employed with discrimination. War surgery of the chest is complicated by the fact that the patient is seriously affected by movement, and this is emphasized by practically every writer on thoracic war surgery. One of the most recent references comes from C. W. B. Littlejohn, of Melbourne, in a report on the early treatment and results of penetrating wounds of the chest.[1] Littlejohn describes the X-ray service of the Australian general hospital, abroad, from which he was writing, as excellent. He states, however, that in spite of this, only a small number of the patients (his series included 100 cases) had an early X-ray examination. "The patients", he writes, "withstand movement and manipulation very badly, so that a complete X-ray examination is out of the question." In Littlejohn's unit a quick screening was carried out and an antero-posterior skiagram was taken in milder cases. In more severe cases examination was deferred until the condition of the patient was more stable. Littlejohn states that a survey at that stage yields very useful information. He admits that the size and position of the foreign body, the amount of blood and air in the pleural cavity, the position of the mediastinum and the diaphragm, and skeletal damage to the thoracic cage are all important points; but, in spite of this, he holds that it is safer to defer the X-ray examination except in mild cases. "All necessary information should be obtainable by ordinary clinical methods."

[1] *The Australian and New Zealand Journal of Surgery*, January, 1942.

With Littlejohn's views in mind—and his views must be heeded, since they are the outcome of practical experience in the field—it will be profitable to consider the report of a discussion on the function of the radiologist in the diagnosis and treatment of chest injuries, held last October at a meeting of the Section of Radiology of the Royal Society of Medicine.[1] The point already raised by reference to Littlejohn's views was referred to by three of the speakers. L. G. Blair, from the Thoracic Surgical Unit, Harefield, said that it was essential to obtain adequate films, postero-anterior or antero-posterior and lateral, at the earliest possible moment. The films enabled the clinician to form an early and accurate assessment of the case. Blair went on to say that failure to provide good films and consequent misinterpretation had led to delay in the institution of correct treatment "and thereafter the almost inevitable train of disasters". At Harefield, he added, they were so convinced of this that as a routine measure whenever possible patients on admission were taken to the ward by way of the X-ray department. The patients should be examined without removal from the stretcher. It was far less strain on a patient to have good films taken with a high-powered plant in this way than to have indifferent films taken with a portable apparatus in a ward, with consequent long exposure. Blair holds that from these preliminary films a fairly accurate knowledge of the conditions in the chest can be obtained, the presence of foreign bodies can be noted and some estimate of their situation made. He thinks that the whole of the chest should be included in the films, because otherwise foreign bodies may be missed owing to the films having been badly centred or centred on the more obviously injured side of the chest. T. Holmes Sellors expressed much the same views as Blair. He was frankly disappointed in the films produced by portable X-ray machines, but thought that results of incomparably greater value could be obtained if the patient could be examined with the full X-ray set on his way from the receiving room to the ward. "A severely injured individual who has survived transport to hospital is not likely to suffer much additional harm from an expeditious visit to the X-ray department on his way to bed." Sellors insisted that the necessity for full and complete radiological investigation was obvious. Without it serious injuries might be overlooked in the absence of adequate physical signs or in the confusion which inevitably resulted from a multiplicity of lesions. What might ultimately turn out to be a major injury might not be recognized at the initial clinical examination or might be relegated to a minor position of importance. An intrathoracic lesion might escape notice in the early stages if the clinical signs and symptoms were slight, as in a case of "blast" which could occur with practically no symptoms. A. Robinson Thomas said that patients' chests could not be examined in the X-ray department before admission to the wards unless the patients were sent to the department by the hospital receiving medical officer. He thought that many patients for whom a skiagram by a portable X-ray machine was demanded in a ward, would suffer little or no setback if they were sent to the X-ray department on a stretcher for examination with the more powerful plant.

To come to a definite conclusion on the question at issue is difficult, but it is also not really necessary. The decision will nearly always depend on the condition of the patient on his arrival at hospital. If he is moribund or almost moribund, as some of those discussed by Littlejohn were, no surgeon or radiologist will delay in sending him straight to a resuscitation ward. If he is not in such dire straights and if a first-class X-ray machine is conveniently situated and in working order, it will be wise to do as Blair and Sellors suggest and have at least an antero-posterior film of the whole chest taken. Very little disturbance is necessary for this. The patient's stretcher can be put onto the X-ray table and he need not be distressed. The only disadvantage is that the presence of blood in the pleural cavity may not be obvious with the patient lying on his back; this possibility will, however, be recognized. Again, if the patient is so ill that he cannot be placed for a few minutes on an X-ray table before he is put to bed, he will probably be too ill to undergo a full clinical examination. And here, of course, opinions will differ as to how far the clinical examination should extend. While on the one hand it will be admitted that certain conditions may not be revealed by clinical examination—certain fractures, for example—it will be clear on the other hand that their immediate discovery will by no means be always necessary to the ultimate recovery of the patient. As soon as the patient has recovered sufficiently to allow an X-ray examination to be made in a properly equipped X-ray department, few clinicians will hold that he should be denied the opportunity of having the full extent of his injuries discovered.

Several other aspects of the discussion at the meeting of the Royal Society of Medicine should be mentioned. L. G. Blair discussed the localization of foreign bodies in the chest. He said that during the past two years he had not made a single depth measurement for a foreign body. He was certain that such measurements were unnecessary and useless. It was the anatomical localization which was important, and this, in his opinion, can be made with certainty by a rapid screening examination. Blair described the different types of movement of a foreign body seen with the screen, and showed that a study of the movement would reveal the anatomical position of the foreign body. During the past two years Blair has not been requested to prepare a single tomogram for a parenchymatous chest lesion. He has attempted tomography for fractures of the sternum; he has had slight success in the lateral plane and none at all in the antero-posterior. On the other hand he has found it valuable in the assessment of damage in fractures involving the dorsal section of the spine—"when the superadded shadows of the lungs are removed a surprisingly clear picture can be obtained of the dorsal vertebræ". Blair then discusses some types of injury in which the diagnosis depends almost entirely on radiology. He shows that a giant cyst of the lung may be difficult to distinguish from a tension pneumothorax, and he discusses the appearance following gross compression of the thorax when the diaphragm has ruptured and hernia of the stomach into the thoracic cavity has occurred. He also points out that the appearance given by emphysematous bullæ may be mistaken for that caused by localized pneumothorax. The picture caused by lung blast is typical, "with its peripheral distribution and shadows rather resembling pleural thickening"; it has to be distinguished from a second type of shadow which is localized to one lung and takes up to six or eight weeks to undergo resolution, which has occurred when there was no possibility of blast injury, and which in Blair's opinion is due to gross localized hæmatoma.

Sellors, from the surgical side, discussed the question of which foreign bodies (missiles) can safely be left alone and which are best removed. It is his experience that life is not compatible with an embedded fragment in the chest much over one and a half to two cubic inches in size. He also pointed out that immediate removal of a foreign body incidental to arrest of hæmorrhage and wound excision is the ideal of treatment; but in practice it often happens that the chest injury is treated expectantly and the question of foreign body treatment does not come up till later. This would be outside the scope of the present discussion were it not for the fact that X-ray examination is often necessary to locate the foreign body responsible for the hæmorrhage.

W. D. W. Brooks, who took part in the discussion, in discussing pneumothorax said that when a pneumothorax was present an important function of radiology lay in the fact that it would reveal the coexistence of other lesions, all clinical evidence of which might be obscured by the pneumothorax. Such conditions included intrathoracic foreign bodies, atelectasis of the underlying lung, hæmatomata, and the presence of small amounts of fluid in the pleural cavity.

[1] *Proceedings of the Royal Society of Medicine*, December, 1941.

Two points remain for emphasis. One is that when a patient's chest is examined after a war-time injury it must be remembered that all the abnormal shadows that appear are not necessarily cast by lesions which are the result of injury. Though this seems obvious, a moment's reflection will show its importance. The other is that the radiologist is a doctor as well as a radiologist—he is not a mere photographer. He should therefore be prepared to discuss treatment with the clinician, and, as Blair states is his practice, he would be wise not to report on a case unless he has a complete history and some indication of the clinical condition of the patient. In other words, the radiologist is a consultant and should always act as one, for the good of the patient, if for no other reason.

PNEUMONIA: A REVIEW OF FIFTEEN THOUSAND CASES.

THE people in the United States of America do things in a big way, as we know to our intense satisfaction in regard to the sinews of war. But the statement holds good also for the field of clinical medicine. One of the latest examples appears in a clinical analysis of fifteen thousand cases of pneumonia that has been made by D. C. Stahle, of the Commonwealth Pennsylvania Department of Health.[1] Stahle calls his report "an evaluation of the effectiveness of various therapeutic agents", and he presented his report to the Section on Preventive and Industrial Medicine at the annual session of the American Medical Association in June, 1941. Medical literature during the last year or two has contained many accounts of groups of cases in which chemotherapeutic agents have been used, and some of them have been mentioned in this journal. A series of fifteen thousand cases, investigated by a responsible officer of health, should not be allowed to pass unnoticed.

Almost in his opening remarks Stahle makes a challenging statement, to the effect that of the 100,000 deaths which occur in the United States every year from pneumonia, 65,000 can be prevented by adequate therapy. The total number of cases in the series was 15,251. The results of treatment (deaths and mortality rates) for the various forms of therapy are set out in a table. In the specific serum therapy group there were 181 cases, the number of deaths was 27 and the case fatality rate 14·92%. With sulphapyridine the number of cases was 9,195, the deaths were 745 and the case fatality rate was 8·10%. With sulphathiazole the figures were 3,666, 304 and 8·29%; with sulphadiazine they were 52, 6 and 11·54%; with serum and sulphapyridine they were 1,456, 183 and 12·57%; with serum and sulphathiazole they were 331, 68 and 20·54%; with no specific therapy they were 370, 69 and 18·65%. There was no attempt, and indeed no attempt was possible, to group these patients or to make any selection of those submitted to different forms of treatment so that the several groups would be comparable in regard to severity of illness. Stahle was taken to task regarding this in the discussion after the reading of his paper. But he freely admitted this point and stated that he had to assume that the group receiving combined therapy was a less favourable one than the group for which chemotherapy alone was used. It is quite likely, as J. G. M. Bullowa suggested, that only the more severely stricken patients received serum and that they received it when chemotherapy had failed or as a last resort. In view of this non-selection of patients for treatment, Stahle points out that an evaluation of the merits of different forms of treatment will necessitate a careful analysis of the many factors which affect the prognosis of themselves and independently of the therapy applied. These factors are: (*a*) the type of pneumococcus acting as the causative agent; (*b*) the age of the patient; (*c*) the incidence of bacteriæmia; (*d*) the incidence of concurrent diseases, such as heart disease, cancer and conditions requiring surgical intervention; (*e*) the incidence of complications, such as empyema, meningitis and others; (*f*) the interval of time between the onset of the disease and the beginning of therapy. Stahle discusses these aspects at some length and we propose to refer to only some of his observations.

In regard to the types of pneumococci, these were determined in 6,043 cases. Types I, II and III were the most numerous and accounted for 50·2% of the whole series. That the typing is important because certain types are associated with a higher fatality rate than others is shown by the fact that of the patients with Type III pneumococci 16·3% died; of those with Type I, 7·2% died. Of course it will be quite clear that the type of pneumococcus must be considered in relation to the others factors enumerated by Stahle, and each of the others in relation to the remainder. Thus when therapy was begun within the first four days the mortality rate among 8,988 cases was 7·59%; when treatment was begun after four days had elapsed the mortality rate among 1,895 cases was 14·78%. To accept the figures for Types I and II pneumococci at their face value it would be necessary to know *inter alia* that the time at which therapy was begun was proportionately the same in the cases of both series. There were in the whole series 3,871 cases in which a complicating disease was present. The mortality rate was 18·88%, which is more than twice the rate for the whole series. Analysis of the figures under this heading for the different types of therapy seems to show that concurrent disease is not a factor that is responsible for the higher death rate in the combined therapy group and is not of itself an indication for the use of combined therapy. It must also be noted that 52·01% of the deaths in the whole series occurred among the patients who had another illness in addition to pneumonia. Complications occurred in 9·31% of the cases of the chemotherapy group and in 11·8% of the combined therapy group. Stahle draws particular attention to 82 cases of pneumococcal meningitis (not all were secondary to pneumonia), among which 67 deaths occurred, a fatality rate of 81·7%. Patients treated with chemotherapy alone fared as well as those who received serum in addition. Inquiry into the relationship between age and fatality rates shows that pneumonia takes a heavy toll at the two extremes of life. For children under two years of age the death rate was 9·26%; for those between two and twelve years of age the rate was 1·53%; for patients thirteen to sixty years of age it was 7·73%; for those over sixty years of age the figure was 23·99%. Stahle analyses his figures and shows that according to them many patients over sixty years of age do just as well on drugs alone as on combined therapy—age itself is not an indication for the latter method of treatment. One of the most interesting features of Stahle's study centres round two groups, each containing by chance 188 patients, who suffered from pneumococcal bacteriæmia. The age distribution was identical for the two groups. The type distribution was also practically the same in the two groups. The case fatality in the combined therapy group was 31·9% and in the chemotherapy group 27·13%. After discussing these two groups in some detail, Stahle comes to the conclusion that combined therapy is no more efficacious in bacteriæmic pneumonia than is drug treatment alone, and therefore its presence does not constitute an indication for drug and serum treatment.

The figures that have been quoted from Stahle's study show the importance of the factors enumerated by him. It may be that the practical outcome of his study will not throw much new light on the pneumonia problem. Stahle in reply to the discussion on his paper said that the purpose of his paper was to point out that too much serum has been given under the previously accepted indications for combined therapy. Whether this is so in Australia we are not in a position to state. Stahle's final recommendation, however, may be quoted. He thinks, as others do, that sulphathiazole is probably the most suitable drug to use because vomiting is encountered only half as often when it is used as with sulphapyridine, and is much less severe when it does occur. After a specimen of sputum has been obtained and blood has been secured for investigation by cultural methods, sulphathiazole should

[1] *The Journal of the American Medical Association*, February 7, 1942.

be given. Patients who fail to respond to chemotherapy in from twenty-four to thirty-six hours should have serum in addition. Serum, he thinks, is of value in those cases in which untoward reactions require discontinuance of chemotherapy early in the disease. Chemotherapy gives the best results when started early, and its use is indicated as soon as a diagnosis of pneumonia has been made.

VITAMIN B AGAIN.

THERE are at least eight recognized members of the vitamin *B* complex, though why some of these should come under this category is perplexing, unless it be that they are water-soluble and have no relation to scurvy. Of these eight discovered by animal experimentation, four certainly have been proved necessary for man; these are: (*a*) B_1, thiamin or aneurin, the original antiberiberi factor; (*b*) riboflavin; (*c*) nicotinic acid, the antipellagra factor; and (*d*) pyridoxin. The remaining moiety future research may find amongst human needs; there is some evidence in favour of one of them, choline, and that inisitol is another is highly probable. It is now generally admitted that vitamin *B* deficiency constitutes the most prevalent problem in the deficiency field amongst civilized races and preventive medicine is offered an opportunity to improve the health of the nation. Much attention has in the past been directed towards the symptomatology of gross deficiencies, but the really practical problem of today is to recognize the often elusive picture of subthreshold assimilation of each member of the group. For example, the early symptoms of minor thiamin deficiency may be weakness, anxiety and lack of mental concentration and interest which might easily be regarded as of purely nervous origin. Deficiency in nicotinic acid not adequate to produce pellagra may lead to no skin lesions at all, but may become manifest in gastro-intestinal upsets, stomatitis, loss of weight, weakness and mental depression. There is usually in addition a reduction of hydrochloric acid in the stomach. That alcoholism may be complicated by avitaminosis has been recognized for some years, and it would appear that thiamin deficiency is the chief cause of the troubles over and above those directly due to the alcoholic poisoning. Pyridoxin deficiency has been shown to be responsible for weakness and difficulty in walking, and improvement in such conditions has followed administration of this vitamin. Even Parkinson's disease has in many cases shown amelioration after large doses of pyridoxin. An extensive list of signs and symptoms beginning with a macerated linear fissure at each angle of the mouth, and including purple tongue, keratitis and seborrhœic skin, has been set down as arising from inadequate riboflavin intake.

Dr. W. H. Sebrell, of Bethesda, Maryland, pleads for a wider recognition of the symptomatology of the less gross forms of avitaminosis and suggests the tentative administration of the appropriate vitamin when the pathological condition of the patient presents not the obvious whole, but part of the syndrome of a particular deficiency.[1]

A PRIMARY TUBERCULOSIS LESION SELF-INFLICTED.

To inflict oneself with tuberculosis and to be able to describe the appearance and development of the lesion falls to the lot of very few. This interesting but unfortunate event appears to have happened to J. S. D. Burnes, who is a second-year medical student at Manitoba Medical College, Winnipeg.[2] On May 15, 1941, the needle that he was using during the course of an autopsy at a mental hospital, slipped, punctured his glove and entered the first knuckle of the ring finger of his left hand. The wound was painted with iodine and was forcibly squeezed so that bleeding was continued for about five minutes. No further precautions were taken, there was no immediate inflammation and occupation was continued as usual. On May 23 Burnes was subjected to a tuberculin test, but no reaction was obtained. On June 11 signs of inflammation were noticed, and at this point Burnes discovered that the autopsy had been performed on a patient who had suffered from advanced pulmonary tuberculosis. On July 2 a tuberculin patch test on the left forearm gave a positive reaction. On June 20 the axillary glands became tender, hard and painful on movement. X-ray examination of the chest on three occasions revealed no abnormality. X-ray treatment was adopted on July 25 and on August 6 the local area of inflammation came to a head. Six days later it began to discharge a thick yellow exudate. Acid-fast bacilli were found in the smear—Burnes states that "the smear was positive for tubercle bacilli". There was a Gaffky count of eight, which means that there were more than fifty bacilli in a field. When Burnes wrote in October, the lesion was intermittently open and closed, "with an exudate positive for tubercle bacilli when open". His general conclusion is that the incubation period for tubercle bacilli in the human body is twenty-eight days.

Topley and Wilson state that tubercle bacilli may gain access to the body by direct inoculation, as by an infected needle or knife or through an abraded pustule, and they quote von Eiselberg (1887) in support. Before gloves were worn at autopsies tuberculosis infection of the hands was not nearly so rare as it is today. The lesion caused in this way is known as *verruca necrogenica* or post-mortem wart. It is really a variety of *tuberculosis verrucosa cutis*, which exists in the form of a warty overgrowth of the epithelium with subjacent infiltration of typical tuberculous type and is always due to inoculation from outside. Molesworth states in his textbook that tubercle bacilli are easier to find in this warty tuberculosis than in lupus, but are never numerous. To return to Burnes—there is no conclusive evidence that the acid-fast bacilli in the pus from his lesion were tubercle bacilli. The evidence admittedly points in this direction, but the conclusion could not be stated beyond question of doubt unless the bacilli had been injected into a guinea-pig and produced tuberculous lesions in that animal. Molesworth attributes the relatively acute course of *verruca necrogenica* to the probable cooperation of other organisms which gain entrance at the same time as the tubercle bacilli. Thus we must conclude that even if the bacilli in question were tubercle bacilli, the incubation period could not be accepted as being always twenty-eight days.

A NEW DIRECTOR-GENERAL OF MEDICAL SERVICES.

THE announcement has recently been made in the daily newspapers that Major-General F. A. Maguire has retired from the position of Director-General of Medical Services and has been succeeded in that office by Major-General S. R. Burston, who until his recent return to Australia was Director of Medical Services with the Australian Imperial Force overseas. Major-General Maguire has occupied the high office for the past twelve months and by his energy and keenness has gained the confidence of the medical profession of the Commonwealth. Much sympathy was expressed with him in his recent illness and he now retires and resumes his civil practice with the appreciation and good wishes of very many both in the army and outside its ranks. Major-General Burston brings to his new office a wealth of administrative experience in the field that will be most valuable to him in his extensive command. Most of us realize that difficult days lie ahead, and the members of the medical profession in all the States are ready to undertake and carry out whatever duties may be assigned to them if the conflict should come still nearer to their homes. Major-General Burston can rely on the willing and whole-hearted support and cooperation of the members of the medical profession, whether they belong to the Australian Army Medical Corps or not.

[1] *Annals of Internal Medicine*, Volume XV, Number 6, December, 1941, page 953.
[2] *The Canadian Medical Association Journal*, December, 1941.

Abstracts from Medical Literature.

GYNÆCOLOGY.

The Priming Action of Stilbœstrol on the Gravid Human Uterus.

A. R. ABARBANEL (*Surgery, Gynecology and Obstetrics*, August, 1941), in a series of 21 cases, has studied the priming action of stilbœstrol on the gravid human uterus. The cases were divided into four groups: induction of abortion, induction of labour, missed abortion and labour, and uterine inertia. After various trials the following routine method was adopted. Ten to fifteen milligrammes of stilbœstrol were given orally every hour for 10 doses; the total dosage over a period of ten hours was 100 to 150 milligrammes. From one to eight hours after the last dose of stilbœstrol a routine induction of labour was begun; the time interval was variable at first, for the effect of the œstrogen alone had to be evaluated. Some patients even received stilbœstrol alone with no subsequent medication, to see whether the œstrogen alone would precipitate the onset of labour. In the first group, consisting of five patients, four were *multiparæ*; they were from seven to twelve weeks pregnant. The indication for interrupting pregnancy was constitutional. In each case the attempt to produce an early abortion proved entirely unsuccessful, even though massive doses of stilbœstrol combined with potent oxytocics were used. In the second group there were ten patients. In seven cases the indication for terminating pregnancy was progressive or fulminating toxæmia unresponsive to conservative measures; in the three other cases there were one of eclampsia and one of post-maturity associated with rheumatic heart disease; the remaining patient was an elderly *primigravida* with a large fœtus and a borderline mid-pelvis. In four cases previous attempts at induction of labour had failed; labour ensued only after stilbœstrol was given and was followed by oxytocics. In other cases the routine induction of labour was omitted; in some the toxæmia was so severe that it was deemed wiser to help insure a successful induction by first priming the uterus with stilbœstrol. In only one case did the uterus fail to respond to oxytocics after the preliminary administration of stilbœstrol; the results in the other nine were considered excellent, even though in two a second course of stilbœstrol was required. In the third group there were two cases of missed labour associated with progressive toxæmia and one case of missed abortion. In two cases the results were excellent. In the third, one of missed labour, stilbœstrol alone, given without oxytocics, was without effect. In the fourth group three cases of uterine inertia were studied. The results were considered successful in two cases; in the third the result was good, but was classified as doubtful, for the uterine contractions increased in intensity but not in frequency. The author concludes that after the first half of gestation the uterus apparently becomes responsive to potent oxytocics after preliminary priming with sufficient amounts of œstrogen. The results obtained with stilbœstrol seem to be somewhat better than those obtained with the so-called natural œstrogens (œstradiol and œstrone). Stilbœstrol alone apparently does not initiate labour, nor do potent oxytocic pituitary extracts; the œstrogen should first be used in sufficient dosage to sensitize the uterus to the subsequent action of oxytocics. The most frequent side effects of the administration of stilbœstrol seemed to be nausea and vomiting. Previous studies had proved that the puerperal patient could easily ingest from 250 milligrammes of stilbœstrol per day to 1,500 milligrammes per week. Careful studies of the blood and urine had failed to disclose any "toxic" effects. The author is of the opinion that stilbœstrol is a safe substance to administer to the pregnant patient, even though evident cardio-vascular, renal or hepatic damage is present. Elevation of the blood pressure appeared to be unaffected by the administration of stilbœstrol. No adverse effects were observed upon the third stage of labour, the babies, the post-partum morbidity, the lochia or lactation.

Ureteral Obstruction and Cancer of the Cervix.

PAUL E. HOFFMAN (*The Western Journal of Surgery, Obstetrics and Gynecology*, February, 1942) states that the occurrence of urological complications in cancer of the *cervix uteri* is often overlooked. After a brief review of the literature he presents a study begun in 1936, of all women admitted to the Stanford Women's Clinic with a proved diagnosis of carcinoma of the cervix. Excretion urography was carried out at the time of the first admission to hospital and at intervals of six months, one year, two years and three years afterwards, and at any time when investigation seemed to be indicated. Ninety-seven patients were studied and classified as follows: Stage I, 13; Stage II, 23; Stage III, 40; Stage IV, 21. In the Stage I group treatment was by radium alone. Only one patient had renal involvement during the three-year period of the study; she was found to have a stricture after two years and became symptom-free after a series of ureteral dilatations. In the Stage II group 18 patients were treated by radium alone and five by radium and deep X rays. Only one patient had an initial renal lesion—a right hydronephrosis, which after ureteral dilatations failed to progress. Three patients died without involvement of the urinary tract. One patient after one year developed obstruction of the right ureter, resulting in complete loss of function of the kidney in spite of repeated dilatations. In the Stage III group 37 patients were treated by deep X rays and radium and three by radium alone; 24 had no initial renal abnormality; of the other 16 cases a ureteral lesion was present on the right side in eight, on the left side in two and on both sides in six. Four of the 24 patients without initial renal lesions developed unilateral obstructive ureteral lesions within six months, two died from metastases unrelated to the renal tracts and 18 have remained free from ureteral obstruction. Of the 20 patients with renal involvement, six died within three years, five with extensive urological damage. Eight of these patients have lost the function of the affected kidney, three have suffered progressive loss of function of one kidney, one was dying from bilateral involvement of the ureters when the paper was written, and one developed a stone in the left kidney during the first year. The stone was removed after thorough dilatation of the ureter, because of progressive loss of function of the right kidney. Only one favourable result was obtained in this group; the patient was treated by ureteral dilatation for three months, and the ureter remained open and the renal function normal. In Stage IV nine patients were treated by deep X rays, two by radium and ten by combined methods. Eight patients had no initial uretero-renal lesion. Of the remaining 13 cases a uretero-renal lesion was present on the right side in four, on the left side in three and on both sides in six. The eight patients with no initial renal lesion were living after three years. Three patients have lost the function of the affected kidney, but compensatory hypertrophy has taken place in the other. Ten patients died after approximately three years; in each instance autopsy revealed involvement of the ureters with its effect on the kidneys. From a comparison of his findings with those of L. A. Pomeroy the author considers that cervical cancer is responsible for almost all the uretero-renal lesions in the Stage IV group. Ureteral obstruction with consequent ureteral dilatation, hydronephrosis, loss of renal function and uræmia is the most frequent cause of death of patients in Stage III or Stage IV. He concludes that intensive dilatation of the affected ureter as a means of alleviating obstruction has proved disappointing and that other methods must be considered.

Stilbœstrol in Menopause Arthralgia.

WILLIAM K. ISHMAEL (*The Journal of Laboratory and Clinical Medicine*, December, 1941) has investigated the treatment of menopause arthralgia, with particular reference to the substitution of stilbœstrol for œstrogenic hormone. He states that the symptoms, probably more annoying than pathological in the early phase, often lead later to a painful crippling condition of the weight-bearing joints. Treatment at the present time is expected to effect a cure; if it does not, the diagnosis is in question. The author's patients were treated by general supportive measures and specific measures. The general measures involved attention to diet, avoidance of traumatic and aggravating climatic factors, the leaving alone of septic foci during active treatment and while rheumatic symptoms were still present, the use of supplementary vitamins when necessary and the correction of disturbances or abnormalities of the various bodily systems. The specific measures consisted of the administration of (i) œstrogenic hormone by injection, (ii) œstrogenic hormone by mouth, (iii) stilbœstrol by subcutaneous injection, (iv) stilbœstrol by mouth, (v) autohæmotherapy, and (vi) artificial fever; (v) and (vi) were employed as supplementary measures only, when patients failed to respond to the other treatment. In addition, physical therapy and orthopædic measures were employed. Forty-eight out of 60 patients had satisfactory remissions after injections of stilbœstrol in conjunction with other measures; 49 out of 60 patients in the control group responded satisfactorily to œstrin injections with the same supportive measures; in 30 cases stilbœstrol was successfully substituted for œstrin without the patients' being aware of the change, 3% having a return of symptoms; 23 patients receiving stilbœstrol by mouth had clinical remission of symptoms, com-

pared with 10 patients who had clinical remission after œstrin therapy. The author concludes that if his findings are borne out by later investigators, and if patients so treated do not later begin to suffer from complications, stilbœstrol should supplant œstrogenic hormone, (*a*) because it is effective when given orally and (*b*) because the cost to the patient is greatly reduced. As the treatment is largely substitutional and must be continued for a long period, these factors would justify the use of stilbœstrol. The author also gives a brief review of the literature.

The Use of Prostigmin in Delayed Menstruation.

L. L. GROSSMANN (*The Western Journal of Surgery, Obstetrics and Gynecology*, February, 1942) reports a series of experiments on the use of prostigmin methylsulphate in the treatment of amenorrhœa with no definite organic background. He refers to the work of Soskin, Wachtel and Hechter, who concluded that "the constancy of the results in menstrual delay and the lack of effects on pregnancy make it possible to use prostigmin as a combined treatment for menstrual delay and a therapeutic test for pregnancy". The author's study was of the same order and confirms their results and conclusions. His series consisted of 30 patients ranging in age from nineteen to forty-six years; with few exceptions the previous menstrual history was normal. The delay in menstruation before the institution of prostigmin therapy varied from five to twenty-five days. Treatment was as a rule by the intramuscular injection of one or two cubic centimetres of prostigmin on each of three successive days; occasionally the flow had begun before the second or third injection was due. There were no toxic effects. With one exception every patient with amenorrhœa not induced by pregnancy began to menstruate after the injections of prostigmin; the exception was a patient, aged forty-six years, who was in the early menopause. The author emphasizes the fact that no patient presenting evidence of endocrine abnormality, even that of physiological involution, can be considered a *bona fide* subject for the test. In one case the results of the prostigmin test and of Friedman's modification of the Aschheim-Zondek test were at variance; the author thinks that, from the circumstances, prostigmin may be of use in the diagnosis of an ectopic pregnancy, although he admits that confirmation of the point is needed. In conclusion he emphasizes the need to instruct the patient carefully as to the purpose of the test; she should in no circumstances be allowed to interpret the procedure as an attempt to terminate a pregnancy.

OBSTETRICS.

Plasma in Obstetrics.

L. H. TISDALL (*American Journal of Obstetrics and Gynecology*, November, 1941) states that plasma is peculiarly adapted for obstetric needs. Obstetric hæmorrhage and shock require immediate and adequate replacement of blood volume. The length of time taken for this replacement, even where blood banks are available, is considerable. Plasma, on the other hand, is immediately available. There is no need for typing or cross matching. The experience of the Blood Transfusion Association of New York in collecting blood for plasma has shown that the vacuum system of collecting blood and drawing plasma is an ideal method, because of the ease of technique and preservation of sterility. The results of its use have been so striking that it is now felt that no obstetric hospital is properly equipped unless plasma is available for immediate use. The blood, approximately 500 cubic centimetres, is kept in an ice-box for from five to seven days. It is shown that sedimentation is greatest at this time, whilst hæmolysis is minimal. The supernatant fluid is drawn off under aseptic technique and portion is retained for incubation with a culture medium. The plasma is drawn into a bottle containing 250 cubic centimetres of physiological saline solution. The use of saline solution inhibits precipitation of fibrin, which is more likely to occur in the undiluted plasma. The average yield from 520 cubic centimetres is about 250 cubic centimetres. The plasma is given in the same way as blood, except that it is passed through a filter; no reaction has occurred; any reaction that has been reported can be traced to pyrogens.

Heartburn in Pregnancy.

N. H. WILLIAMS (*American Journal of Obstetrics and Gynecology*, November, 1941) discusses heartburn, its incidence, causation and treatment. Highly strung individuals are predisposed to heartburn. Gastric hyperacidity is not a cause of, nor is it specifically related to, gastric secretion. Rayner in 1933 recognized three groups of patients with hyperacidity: first, those who were relieved by acids; second, those who were relieved by alkalis; and third, those in whom the symptom was aggravated by acid and was not relieved by alkali. Chester Jones learned that heartburn is derived from spasm of the cardiac sphincter of the œsophagus. This was proved by the manipulation of a distensible balloon. The pressure of the balloon against the area caused the sensation of burning. In pregnancy there is also encroachment by neighbouring organs and intestinal tone is altered. On this basis injection of one cubic centimetre of a 1 in 2,000 solution of prostigmin was tried, and the results were that 14 patients out of 16 were made more comfortable. The symptoms gradually returned in about seven days and were relieved by a repetition of the dose.

Blood Loss in Obstetrics.

L. C. CONN, J. R. VANT AND M. M. CANTOR (*American Journal of Obstetrics and Gynecology*, November, 1941) report a series of 2,000 consecutive vaginal deliveries in which 800 mothers were *primiparæ* and 1,200 were *multigravidæ*. The average blood loss was 388 cubic centimetres for *primiparæ* and for the whole series 323 cubic centimetres. There was a definite relationship between weight of the patient and blood loss; also an increase in the size of the placenta was likely to result in an increased blood loss. When the use of a sedative was investigated the effect was found to be so great as to lead the authors to a change in technique of the use of these drugs. The average duration of the third stage was thirteen minutes; where the third stage was longer than this, a greater loss was experienced. Their second avenue of study was blood dilution. It is established that hæmorrhage is followed by a decline in the specific gravity of the blood; therefore the specific gravity of the blood serum was examined at certain periods before labour and during the puerperium. This procedure is now relatively simple. It was found that the lower the specific gravity before labour, the greater was the subsequent blood loss.

Nutrition Study in Pregnancy.

P. F. WILLIAMS AND FLORENCE G. FRALINM (*American Journal of Obstetrics and Gynecology*, January, 1942) have made a study of 514 pregnant women and have compared actual food intake with the variously stated requirements and relationships between food intake and various obstetric factors. They took for their study patients from the prenatal clinics of the Presbyterian Hospital, Jewish Hospital and the Philadelphia General Hospital. Statistically, the sampling was not accurate, as there was too large a percentage of Negroes and too large a proportion in the lower age group, and possibly too many were in the relief class. They found that the caloric, carbohydrate and fat intake was unaffected by income, but the intake of vitamin *A*, vitamin B_1, ascorbic acid and riboflavin rose with income; so also did protein, calcium and iron to a lesser degree. In these small series there was no positive relationship between dietary adequacy and the occurrence of certain complications of pregnancy and childbirth. There was no evidence that toxæmia occurred in the presence of insufficient protein, vitamin *A* or vitamin B_1. Protein intake apparently has no bearing on the ability of the women to nurse their babies. However, the analysis showed that errors in food habits and inadequate diets were the rule and were not necessarily attributable to economic circumstances. By use of the yard stick of nutrition as laid down by the National Research Council, only 10 diets out of 516 were found to meet all the requirements and could be termed good; 57% were below minimal requirements, and when one article alone was singled out, calcium was the most frequently deficient. Such evidence points to a wide prevalence of dietary deficiency among pregnant women. It has been announced that the physical examination of the first million men conducted under selective service caused 133,000 to be rejected as unfit for military service from disabilities directly or indirectly connected with nutrition. When these facts are borne in mind it is realized that long-term studies with adequate parallel control will be necessary to determine the ultimate effect upon both mother and child. In this respect the authors realize the inadequacy of the study which they present.

Aplastic Anæmia in Pregnancy.

E. S. HURWILL AND L. FIELD (*American Journal of Obstetrics and Gynecology*, January, 1942) report a fatal case of aplastic anæmia in a patient twenty-seven years of age, which occurred at the Mount Sinai Hospital; they give complete laboratory and pathological data. Among a total group of 14 cases there were only five survivals. In all of these the uterus had been emptied. Death occurred in each of the three cases in which there was no interruption of pregnancy. It is thought from the evidence that gravidity may play an ætiological or conditioning role. Interruption of pregnancy should be strongly considered in the presence of aplastic anæmia.

British Medical Association News.

ANNUAL MEETING.

THE annual meeting of the New South Wales Branch of the British Medical Association was held at the Robert H. Todd Assembly Hall, British Medical Association House, 135, Macquarie Street, Sydney, on March 26, 1942, COLONEL W. VICKERS, D.S.O., the President, in the chair.

ANNUAL REPORT OF THE COUNCIL.

On the motion of Dr. A. J. Collins, seconded by Dr. G. M. Barron, the annual report of the Council was received and adopted. The report is as follows.

The Council presents the following report on the work of the Branch for the year ended March 26, 1942.

Membership.

The membership of the Branch is now 1,894, as against 1,869 at the date of the last report. The additions have included 120 elections, reelections and resumptions, and 24 removals into the area of the Branch; while the losses have included 17 by resignation, 15 removals out of the area of the Branch, 55 by default in payment of subscription, and 32 by death. The losses by death were as follows: Dr. C. W. Thompson, Dr. F. E. Wall, Dr. G. H. Dobbyn, Dr. A. D. Gillies, Dr. N. J. Solomon, Dr. C. H. Scott, Dr. H. Z. Throsby, Dr. F. A. Pockley, Dr. A. C. McArthur, Dr. C. P. Miskle, Dr. R. E. B. Elder, Dr. A. B. Nairn, Dr. M. A. McI. Sinclair, Dr. S. P. Lyttle, Dr. E. A. Wherrett, Dr. A. R. H. McLeod, Colonel W. E. Kay, Dr. H. E. Lee, Dr. C. E. Jelbart, Dr. W. Chisholm, Dr. G. R. Gillies, Dr. L. P. Johnston, Dr. A. Murray Will, Dr. W. G. Armstrong, Dr. J. B. Meredith, Surgeon Lieutenant C. F. Harrington, D.S.C., Dr. A. J. Corfe, Dr. J. S. Dickson, Dr. J. S. Campbell, Dr. R. R. Hardman, Dr. C. G. Adams and Dr. W. Perry.

Roll of Honour.

Died on Active Service.

Colonel W. E. Kay, D.S.O., V.D.

Lieutenant-Colonel A. J. Cunningham.

Surgeon Lieutenant C. F. Harrington, D.S.C.

Meetings.

Ten ordinary meetings of the Branch (including the annual general meeting), three extraordinary meetings and eight clinical meetings were held. The average attendance was 68. Seven of the ordinary meetings were held in conjunction with meetings of special groups, namely: May 1, with the Section of Urology; May 29, with the Section of Medicine and the Section of Radiology; June 26, with the Section of Pædiatrics and the Section of Pathology and Bacteriology; July 31, with the Section of Medicine, the Section of Surgery and the Section of Radiology; August 28, with the Section of Neurology, Psychiatry and Neurosurgery; September 25, with the Section of Orthopædics; November 27, with the Section of Medicine. The clinical meetings were held at the Royal Alexandra Hospital for Children, the Royal Prince Alfred Hospital, the Royal North Shore Hospital, the Women's Hospital, Crown Street, Broughton Hall Psychiatric Clinic, the Sydney Hospital, Saint Vincent's Hospital and the Prince Henry Hospital. The business of the meetings included twenty-one papers and addresses, numerous reports of cases, exhibits and demonstrations. At the extraordinary meeting held on April 24 a ceremony was held for the unveiling of the King's Colours presented in 1904 by His Majesty King Edward VII to the New South Wales Medical Corps, Australian Army Medical Corps, in recognition of services rendered to the Empire in South Africa. Following the ceremony, Major-General F. A. Maguire, C.M.G., D.S.O., Director-General of Medical Services, gave an address. Members of the legal profession and the police force attended the ordinary meeting on October 30, by invitation, and papers were read by representatives of each profession and of the police force on a medico-legal subject, *viz.*, "Driving under the Influence". Major-General R. M. Downes, C.M.G., Inspector-General of Medical Services, addressed members on "The A.A.M.C. in the Middle and Far East" at the ordinary meeting on December 11. At the extraordinary meetings on March 27 and November 27 By-law 4 and By-law 26 (*c*) were amended respectively. An invitation was extended to the fifth and sixth year medical students of the University of Sydney to attend ordinary meetings, and to sixth year medical students to attend clinical meetings of the Branch.

Representatives.

The Branch was represented as follows:

1. Council of the British Medical Association (1938-....): Professor R. J. A. Berry.
2. Federal Council of the British Medical Association in Australia: Dr. George Bell, O.B.E., Dr. W. F. Simmons.
3. Contract Practice Subcommittee of the Federal Council: Dr. H. R. R. Grieve.
4. Australasian Medical Publishing Company, Limited: Dr. T. W. Lipscomb, Dr. F. P. Sandes, Dr. A. M. Davidson, O.B.E.
5. New South Wales Post-Graduate Committee in Medicine: Lieutenant-Colonel A. C. Thomas, Dr. E. M. Fisher.
6. Ophthalmic Association Limited: Dr. Colin Ross.
7. Australian Aerial Medical Services: Representative, Dr. George Bell, O.B.E.; Deputy Representative, Major J. G. Hunter.
8. Council of the Bush Nursing Association (1941-1942): Colonel W. Vickers, D.S.O.
9. Board of Control of the Campaign against Tuberculosis: Lieutenant-Colonel A. S. Walker.
10. Metropolitan Hospitals Contribution Fund of New South Wales: Dr. P. L. Hipsley.
11. Saint John Ambulance Association: Colonel W. Vickers, D.S.O.
12. Executive Committee of the Council for Mental Hygiene for New South Wales: Lieutenant-Colonel C. K. Parkinson.
13. Standards Association of Australia: (i) Institutional Supplies Committee, Dr. S. W. G. Ratcliff; (ii) Sectional Committee on Interior Illumination of Buildings, Dr. E. A. Brearley; (iii) Committee for a Safety Code in the Use of Paints, Dr. T. M. Greenaway.
14. Medical Officers' Relief Fund (Federal): Local Committee of Management for New South Wales, Dr. E. H. M. Stephen, Dr. A. M. Davidson, O.B.E., Dr. A. J. Collins, D.S.O., M.C.
15. Road Safety Council: (i) Committee for the Determination of Visual Standards for Motor Drivers, Dr. R. G. Waddy; (ii) Committee for the Determination of the Physical Capacity of Motor Drivers, Dr. J. Hoets.
16. Police Boys' Club: Colonel W. Vickers, D.S.O.
17. Medical Appointments Advisory Committee (Hospitals Commission of New South Wales): Colonel W. Vickers, D.S.O.
18. Australian League of Nations Union—Refugee Emergency Council: Dr. E. P. Blashki.
19. Special Departmental Committee for the Investigation of Maternal Deaths: Dr. L. A. Dey.
20. Recreation and Leadership Movement: Professor Harvey Sutton, Dr. W. C. McClelland.
21. Council of the Royal Society for the Welfare of Mothers and Babies: Sir Robert Wade, Dr. E. H. M. Stephen.
22. Organization and Coordination of Medical Services of the Commonwealth: Dr. A. J. Collins, D.S.O., M.C.
23. New South Wales Medical Board, Dr. J. R. Ryan.
24. The Free Library Movement: Dr. E. H. M. Stephen.
25. Workers' Educational Association: Dr. R. A. M. Allen, M.C.
26. New South Wales Institute of Hospital Almoners: Colonel W. Vickers, D.S.O.
27. Council of Education: Dr. A. J. Collins, D.S.O., M.C.
28. Department of Physical Education: (i) Physical Education Advisory Committee, Professor Harvey Sutton; (ii) Pre-School and Sub-Primary Committee, Dr. J. Hoets, Dr. D. G. R. Vickery.
29. New South Wales War Loans and War Savings Certificates Committee: Dr. A. J. Collins, D.S.O., M.C.
30. Overseas Children Citizens' Committee: Major J. G. Hunter.
31. National Emergency Services Council: Major J. G. Hunter.

Council.

(*a*) The attendance of members of the Council and of the standing committees was as set out in the accompanying table.

(*b*) The representatives of the Local Associations of Members, appointed on the invitation of the Council to attend the regular quarterly meetings of the Council, were as follows: Dr. R. A. Robertson (Border), Dr. S. J. Woolnough (Central Western), Dr. G. F. Elliott (Illawarra Suburbs), Dr. L. Cowlishaw (Kuring-gai District), Dr. E. S. Stuckey (Northern District), Dr. J. R. Ryan (North Eastern), Dr. N. F. Benjamin (Southern District), Dr. C. H. Jaede (South Sydney), Dr. R. V. Bretherton (Warringah District), Dr. H. M. Rennie (Western Suburbs).

Library.

Dr. G. C. Willcocks was appointed to the position of Honorary Librarian.

The following are the figures for the year:

Visitors to the library	2,594
Books lent to members	542
Journals lent to members	1,191
Books added to the library	75
Journals added to the library	2

The number of visitors to the library during the year has decreased by 289 as compared with last year's figures, no doubt due to the absence of those members on active service.

Donations of books and periodicals were received from the Editor, THE MEDICAL JOURNAL OF AUSTRALIA, the Library of the Surgeon-General's Office, the Mayo Clinic Foundation, the University of Melbourne, the Public Health Department, the Guild of Saint Luke, Dr. C. E. Corlette, Dr. A. T. Nisbet, Dr. H. J. Ham, Dr. J. N. Chesterman, Dr. R. J. Silverton, Dr. H. C. R. Darling, Dr. R. C. Winn, Dr. C. C. Coghlan, the late Dr. H. Z. Throsby, Dr. I. Brodziak, Dr. W. T. Whitby, the Section of Radiology, the Section of Obstetrics and Gynæcology, the Section of Medicine and the Section of Pathology and Bacteriology, and the Ophthalmological Society of Australia (British Medical Association).

Three writing tables were purchased for the library during the year.

Affiliated Local Associations of Members.

Border (affiliated 1908): *Chairman*, Dr. C. M. Macknight; *Honorary Secretary*, Dr. L. S. Woods. Membership, 12. Two meetings were held.

Canterbury-Bankstown (affiliated 1930): *Honorary Secretary*, Dr. G. Russell. Membership, 24. Four meetings were held.

Central Northern (affiliated 1910): *Chairman*, Dr. C. A. F. Clark; *Honorary Secretary*, Dr. O. J. Ellis. Membership, 76. Four meetings were held.

Central Southern (affiliated 1909): *Honorary Secretary*, Dr. R. G. Woods. Membership, 25. One meeting was held.

Central Western (affiliated 1910): *Chairman*, Dr. S. J. Woolnough; *Honorary Secretary*, Dr. K. S. M. Brown. Membership, 45. Three meetings were held.

Eastern District (affiliated 1913): *Honorary Secretary*, Dr. N. E. McLaren.

Eastern Suburbs (affiliated 1911): *Chairman*, Dr. S. G. Nelson; *Honorary Secretary*, Dr. C. M. Burns. Membership, 109. Six meetings were held.

Far South Coast and Tablelands (affiliated 1935): *Honorary Secretary*, Dr. L. W. Wing. Membership, 12. Four meetings were held.

Illawarra Suburbs (affiliated 1913): *Chairman*, Dr. J. B. Whittemore; *Honorary Secretary*, Dr. C. W. Ashby. Membership, 47. Five meetings were held.

Kuring-gai District (affiliated 1929): *Chairman*, Dr. W. L. Donaldson; *Honorary Secretary*, Dr. E. A. Cook. Membership, 60. Five meetings were held.

North Eastern (affiliated 1913): *Chairman*, Dr. W. A. Standish; *Honorary Secretary*, Dr. J. B. Oakeshott.

Northern District (affiliated 1911): *Chairman*, Dr. R. G. Banks-Smith; *Honorary Secretary*, Dr. R. J. Jackson. Membership, 66. One meeting was held.

South Eastern (affiliated 1914): *Honorary Secretary*, Dr. A. L. Caselberg.

South Sydney (affiliated 1909): *Chairman*, Dr. G. Cummins; *Honorary Secretary*, Dr. C. H. Jaede. Membership, 28. One meeting was held.

Southern District (affiliated 1909): *Chairman*, Dr. N. F. Benjamin; *Acting Honorary Secretary*, Dr. R. M. G. Holmes. Membership, 62. One meeting was held.

Warringah District (affiliated 1929): *Chairman*, Dr. J. S. F. Elphinstone; *Honorary Secretary*, Dr. E. L. Newman. Membership, 83.

Western (affiliated 1908): *Chairman*, Dr. K. C. T. Rawle; *Honorary Secretary*, Dr. S. R. Dawes. Membership, 73. Three meetings were held.

Western Suburbs (affiliated 1908): *Chairman*, Dr. H. M. Rennie; *Honorary Secretary*, Dr. C. W. Coombe.

Annual Meeting of Delegates.

The twenty-eighth annual meeting of delegates of the affiliated local associations of members with the Council was held on Friday, December 12, 1941.

The delegates present at the meeting were as follows: Border, Dr. R. A. Robertson; Canterbury-Bankstown, Dr. A. H. Parker; Central Northern, Dr. O. J. Ellis; Central Western, Dr. G. N. M. Aitkens; Eastern Suburbs, Dr. J. H. Leadley; Far South Coast and Tablelands, Dr. L. W. Wing; Illawarra Suburbs, Dr. G. W. Ashby; Kuring-gai District, Dr. G. L. Howe; Northern District, Dr. R. J. Jackson; North Eastern, Dr. J. R. Ryan; Southern District, Dr. Baden Cooke; South Eastern, Dr. A. L. Caselberg; South Sydney, Dr. C. H. Jaede; Warringah District, Dr. M. H. Elliot-Smith; Western, Dr. J. T. Paton; Western Suburbs, Dr. H. M. Rennie.

Special Groups for the Study of Special Branches of Medical Knowledge.

Anæsthesia (inaugurated 1934): *Honorary Secretary*, Dr. A. D. Morgan. One meeting was held.

Genito-Urinary and Venereal Diseases (inaugurated 1928).

Hygiene and Preventive Medicine (inaugurated 1922): *Honorary Secretary*, Lieutenant-Colonel E. S. A. Meyers.

ATTENDANCE AT COUNCIL AND STANDING COMMITTEE MEETINGS.

	Council.	Committees.					
		Executive and Finance.	Organization and Science.	Medical Politics.	Hospitals.	Ethics.	Medical Sociology and Research
DR. G. M. BARRON	11	—	—	—	—	2	1
DR. GEORGE BELL (Hon. Treasurer and Premises Attorney)	13	11	0	6	5	0	0
LIEUTENANT-COLONEL SIR CHARLES BLACKBURN	10	—	—	—	—	1	—
DR. K. S. M. BROWN	12	—	—	9	5	—	—
DR. A. J. COLLINS (Hon. Secretary)	10	9	0	8	2	1	1
DR. A. M. DAVIDSON	8	9	—	—	—	—	0
DR. L. A. DEY	13	—	—	10	—	—	—
DR. B. T. EDYE	10	7	—	—	—	2	—
DR. T. M. GREENAWAY	11	—	1	—	3	—	—
DR. H. R. R. GRIEVE	12	—	—	8[2]	—	—	1
DR. P. L. HIPSLEY	10	—	—	—	4	2	—
PROFESSOR W. K. INGLIS (Past President)	10	11	1	—	—	—	—
LIEUTENANT-COLONEL H. HUNTER JAMIESON	7	—	—	7	—	—	—
COLONEL A. M. McINTOSH[1]	5	6	—	—	—	—	—
LIEUTENANT-COLONEL K. C. T. RAWLE[1]	8	—	—	7	1	—	—
DR. W. F. SIMMONS (President-Elect)	12	10	1	10	5	1	1
LIEUTENANT-COLONEL A. C. THOMAS[1]	8	—	—	—	—	—	—
DR. E. A. TIVEY	13	—	1	8[2]	—	2	—
COLONEL W. VICKERS (President)	13	10	0	8	4	2	1
DR. G. C. WILLCOCKS (Hon. Librarian)	13	9	—	—	—	—	0
Meetings held	13	12	1	11	5	2	1

[1] On military duties. [2] Coopted.

Medical Literature and History (inaugurated 1925): *Honorary Secretary*, Dr. L. Cowlishaw.

Medicine (inaugurated 1924): *Chairman*, Dr. E. H. Stokes; *Honorary Secretary*, Dr. W. L. Calov. Six meetings were held, three in conjunction with meetings of the Branch.

Neurology, Psychiatry and Neurosurgery (inaugurated 1924): *Chairman*, Dr. J. A. H. McGeorge; *Honorary Secretary*, Dr. C. Henry. Four meetings were held, one in conjunction with a meeting of the Branch.

Obstetrics and Gynæcology (inaugurated 1925): *Chairman*, Major-General F. A. Maguire, C.M.G., D.S.O.; *Honorary Secretary*, Dr. M. Britnell Fraser. Three meetings were held.

Orthopædics (inaugurated 1923): *Honorary Secretary*, Dr. F. H. McCallow. One meeting was held in conjunction with a meeting of the Branch.

Oto-Rhino-Laryngology (inaugurated 1924): *Honorary Secretary*, Dr. D. G. Carruthers. Four meetings were held.

Pædiatrics (inaugurated 1921): *Honorary Secretary*, Dr. K. Winning. Three meetings were held, one in conjunction with a meeting of the Branch.

Pathology and Bacteriology (inaugurated 1924): *Chairman*, Dr. O. Latham; *Honorary Secretary*, Dr. F. S. Hansman. Four meetings were held, one in conjunction with a meeting of the Branch.

Radiology (inaugurated 1926): *Honorary Secretary*, Dr. A. T. Nisbet. Two meetings were held in conjunction with meetings of the Branch.

Surgery (inaugurated 1925): One meeting was held in conjunction with a meeting of the Branch.

Urology (inaugurated 1940): *Chairman*, Dr. J. W. S. Laidley; *Honorary Secretary*, Dr. R. G. S. Harris. One meeting was held in conjunction with a meeting of the Branch.

Special Groups Committee.

A Special Groups Committee was constituted to consider matters relating to members who are practising as consultants or specialists. The personnel of the committee consists of the President, President-Elect, Honorary Secretary, Honorary Treasurer, *ex-officio* members, together with a representative of each of the special groups.

British Medical Association Lectures.

Lectures were arranged as follows:

North Eastern Medical Association, Lismore, April 19, 1941: Dr. J. C. Storey, "War Surgery".

Western Medical Association, Dubbo, June 15, 1941: Dr. A. M. B. Grant, "The Investigation and Treatment of Sterility, Male and Female".

The Federal Council of the British Medical Association in Australia.

The Federal Council of the British Medical Association in Australia met in Sydney on September 22, 23 and 24, 1941, Dr. George Bell and Dr. W. F. Simmons attending as representatives of the Branch. A report of this meeting was published in THE MEDICAL JOURNAL OF AUSTRALIA of November 1, 1941.

The Council entertained the members of the Federal Council and the Directors of the Australasian Medical Publishing Company, Limited, at dinner during the meeting.

The Medical Journal of Australia.

Approval has been given to the proposed form of agreement between the Federal Council of the British Medical Association in Australia and the Australasian Medical Publishing Company, Limited, for the supply of the journal to members.

Despite difficulties in regard to labour and supplies of paper, the same high scientific standard of the journal has been maintained as in previous years.

Department of Medical Sociology and Research.

Broadcasting, the first medium chosen for the department's work, apart from its other advantages, has not been affected by war-time conditions, which would not have been the case if the work had been attempted mainly through the Press. The response to the Spokesman's talks, begun in July, 1940, on health and medical subjects was such that the Broadcasting Commission arranged further series during 1941; and it has now requested that the talks be continued without break (apparently for an indefinite period). As these talks are of fifteen minutes each, it is possible to treat each subject at sufficient length to make it both informative and interesting. Recently three talks have been devoted to subjects suggested by the war: air raid medical organization; treatment of shock in air raid casualties; and treatment of hæmorrhage. Emphasis was on the first aid aspect of these subjects. They elicited comments and inquiries from members of the public, including first aid teachers.

A statement was prepared for the Parliamentary Select Committee on Broadcasting. It is hoped that the committee's report will make reference to the Association's work of developing amongst the public a deeper appreciation of the principles of scientific medicine.

Six short articles were contributed to the booklet published by the Health Week Organisation. Two longer articles were pepared for the *A.B.C. Weekly*, the subjects being "Glandular Extracts: Their Uses and Dangers" and "Plastic Surgery". On various occasions assistance was given to newspapers, in explanatory comment on health and medical subjects, and to the Standards Association of Australia and other organizations.

The Broadcasting Commission recently introduced a feature, "The Kitchen Front", similar in aim to the "Kitchen Front" of the British Broadcasting Commission. The Association is represented on the Nutrition Advisory Committee organized by the Commission. Short daily broadcasts are given on various aspects of nutrition and preparation of food, with special reference to the best use of the nation's food supply in war-time. At the request of the Commission, the week-day talks are being edited by the department, which also prepares a ten-minute Sunday talk.

The material of the Spokesman's evening talks has been further disseminated by the *A.B.C. Weekly*, which frequently gives a page to extracts from the scripts. Subjects of recent talks have included several of sociological, as well as medical, interest, such as "Social Roots of Disease". To date, 56 fifteen-minute talks have been given by the Spokesman, over 100,000 words being devoted to a wide variety of health and medical subjects.

War Emergency Organization.

Members Engaged in Military Service.

Since the commencement of the war 475 members have been engaged in full-time military duties either overseas or in the armed forces. In addition very many members have given their services in a part-time capacity.

Shortage of Doctors.

A delegation from the Association met the Minister for Health on July 2, 1941, in regard to the matter of the shortage of doctors. In submitting the Association's views the delegation pointed out:

1. That many young practitioners would be graduating from the universities in Australia during the coming years. (In Sydney alone the average would be 150 for the next three years.)

2. That it was essential to maintain a high standard of education.

3. That it was more than likely that English practitioners from Great Britain would come to Australia after the war.

4. That the registration of aliens would interfere with the war services of the profession.

5. That it was likely that, as after the last war, many returned soldiers would enter the faculty.

Protection of Practices.

The Council is pleased to record that it has approved of a number of schemes for the protection of practices of members on active service, submitted by local associations and groups of members.

National Emergency Services.

Many members of the Association are rendering valuable service in an honorary capacity as medical commandants to National Emergency Services.

Petrol Rationing.

At the suggestion of the Chairman, Commonwealth Liquid Fuel Control Board, a committee was appointed by the Council to confer with the State Board in regard to the supply of petrol to medical practitioners. The personnel of the committee is as follows: Dr. A. J. Collins, D.S.O., M.C., Dr. E. A. Tivey and the Medical Secretary.

Medical War Relief Fund.

This fund was established by the Federal Council of the British Medical Association in Australia to assist colleagues in Great Britain who have suffered as the result of the war.

An amount of £1,773 3s. 8d. has been subscribed by members of the Branch to the fund.

Subsidized Practices.

In a number of sparsely populated areas the Government has found it necessary to subsidize medical practitioners from neighbouring districts for the purpose of providing a medical service. With this procedure the Council fully agrees, as it realizes that all sections of the community should be provided with medical services.

On investigating a number of these subsidies, the Council found in some instances that the remuneration was unsatisfactory and that there did not appear to be a uniform basis on which it was made. The Council therefore has taken up this particular aspect of the matter with the Minister for Health.

Hospitals.

Broken Hill and District Hospital.

The Council is pleased to report that as a result of negotiations with the Board of the Broken Hill and District Hospital, members of the Association practising in Broken Hill have been invited by the board to act as visiting medical officers to the hospital. As in the past, members of the profession in Broken Hill had no access to the hospital, this act on the part of the Board was greatly appreciated by the Council.

Public Hospitals—Committee of Investigation.

A statement setting out the views of the Association in regard to the staffing, finance and administration of public hospitals was submitted to the Committee of Investigation appointed by the Minister for Health. The Minister regretted that he could not accept the request of the Council that the Association be represented on the committee.

A General Medical Service for Australia.

Much consideration has been given by the Council during the year to various schemes for the provision of a general medical service for Australia. The matter was specially referred to the annual meeting of delegates. The resolutions of this meeting were adopted by the Council and forwarded to the Federal Council, which, in the opinion of the meeting of delegates, is the only body that can speak for and on behalf of the profession in Australia.

Contract Medical Practice.

Friendly Society Lodge.

As a result of a conference held on September 16, 1941, between the executive of the Friendly Societies' Association and the Council, as represented by the Medical Politics Committee, an agreement was reached in respect to the following matters:

(i) *Certificates to Members Suffering from Chronic Illnesses.*—In the case of members suffering from protracted or chronic illnesses extending over a period of three months the medical officer shall have the right to issue a certificate once a month, and after a further period of three months, once a quarter, the certificate in such case to be endorsed "protracted or chronic illness", except that should any doubt arise, the Branch or the grand executive (or such executive committee as may be appropriate to the individual society) shall have the right to ask for an interim certificate.

(ii) *Income Limit.*—Each society affiliated with the Friendly Societies' Association to include on its form of application for membership (which will be presented to the medical officer at the time of examination) the following question: "Has your normal income during the past twelve months exceeded £5 per week?"

(iii) *Payment of Quarterly Accounts.*—Each lodge to forward payment to the medical officer within fourteen days of the first day of January, April, July and October in each year without waiting for an account from the medical officer.

Workers' Compensation Practice.

In view of certain statements made by a member of the Legislative Assembly, which reflected seriously on the professional conduct of medical practitioners engaged in the treatment of workers' compensation cases, representations were made to the Premier that an inquiry should be held into the matter. These representations were made in the first place by a delegation from the Council, which was received, on behalf of the Premier, by the Honourable W. E. Dickson, M.L.C., Assistant Minister. At a later stage the representations were submitted in a written communication to the Premier. A reply was received that, having regard to all the circumstances, it was felt that a public inquiry into the allegations would not be justified.

Amendments to By-Laws.

1. At an extraordinary general meeting held on March 27, 1941, By-law 4 (*f*) (annual subscription) was amended to read:

> In the case of a member serving with the armed forces of the British Empire the annual subscription shall be three pounds three shillings.

2. At an extraordinary general meeting held on November 27, 1941, By-law 26 (*e*) was amended to include "The Provident Medical Society".

British Medical Agency of New South Wales Limited.

The annual general meeting of members of the British Medical Agency of New South Wales Limited was held on October 7, 1941.

In presenting the report of the directors on the business of the agency for the year ended June 30, 1941, the Chairman, Sir Robert Wade, pointed out that as the result of conditions existing, a further decrease in revenue was suffered during the year as compared with the two previous years. This was inevitable in view of the conditions, and it was satisfactory, therefore, that after providing for a reserve of £290 to meet income taxes, there was still a profit of £474 for the year. The greatest reduction in income was in the commission on sales of practices, which was only to be expected, but there was not a great deal of variation in earnings in other directions.

A further amount had been placed on fixed deposit during the year, and the total now stood at £4,500, which, of course, would constitute a reserve fund which would provide against possible losses which might accrue during the coming years.

The continued call-up of men for military service had naturally made further inroads into the number of practitioners available for *locum* work, and it had become extremely difficult to find suitable men. Naturally, practitioners would appreciate the difficulties of the agency in fulfilling their requests. The same factors would mitigate against the possibilities of sales of practices in coming months.

It was pleasing to note the steady increases in commissions from insurance business and these returns, being of a more stable nature than those from other sources, were very gratifying.

In accordance with the articles of association, all the directors retired from office, and Sir Robert Wade and Colonel A. M. McIntosh intimated that they did not seek reelection. The following were nominated for the vacancies and were duly elected: Lieutenant-Colonel F. Brown Craig, Dr. A. M. Davidson, Dr. George Bell and Lieutenant-Colonel A. C. Thomas.

Medical Finance Limited.

The annual general meeting of shareholders of Medical Finance Limited was held on October 7, 1941.

The Chairman, Sir Robert Wade, in presenting the report of the directors on the business of the company for the year ended June 30, 1941, again pointed out the difficulties affecting the company as the result of the war.

Loans were granted to twelve new applicants during the year and the total number of loan accounts outstanding as at June 30 were 48, the liability of borrowers being £62,229 principal and £669 accrued interest. The actual gross income earned was more than sufficient to pay the working expenses, but as the company had had to write off £1,596 for bad debts, the result of the year's work showed a loss of £618. It was considered that all the accounts remaining on the books were good and collectable, and it was not anticipated that further loss would be made in connexion with any of the loans at present outstanding. As to the position for the coming year, it was hoped that it would show a more satisfactory return, but at the same time it was pointed out that very few new applications for loans were being considered owing to the uncertainty of the future, and it would be the policy of the directors to grant loans only on those propositions which were of sound financial worth. It should be noted that the company, since its inception, had granted a total of 69 loans, 21 of which have since been discharged by the payment of over £30,000. This should be conclusive evidence of the valuable part played by the company in providing for the requirements of the profession in this State.

So far no calls had had to be made on members, and as far as could be seen at the time, it was not likely that it would be necessary to do so.

It was necessary to elect directors to fill the vacancies created by the retiring directors, Dr. George Bell and Colonel A. M. McIntosh. Colonel McIntosh did not desire reelection owing to being engaged on military duties. Dr. George Bell was duly reelected as a director for the ensuing year.

Premises Revenue Account.

The premises revenue account discloses a net surplus of £1,786 19s. 6d. as against a net surplus of £3,176 15s. 4d. for the year ended December 31, 1940, thus showing a decrease of £1,389 15s. 10d. in the net surplus revenue earned. This decrease is accounted for by a net decrease in income of £360 3s. 7d. and a net increase in expenditure of £1,029 12s. 3d. as set out in detail on the accompanying comparative schedule.

A comparison of the annual percentages of expenditure to rent revenue from the time of opening the building in 1930 up to December 31, 1941, is as follows:

	Percentage of Expenses to Revenue.	Percentage of Result to Revenue.
½ year to December 31, 1930 ..	119·4%	Deficiency 19·4%
1 year to December 31, 1931 ..	114·8%	Deficiency 14·8%
1 year to December 31, 1932 ..	109·8%	Deficiency 9·8%
1 year to December 31, 1933 ..	97·9%	Surplus 2·1%
1 year to December 31, 1934 ..	77·7%	Surplus 22·3%
1 year to December 31, 1935 (including depreciation) ..	102·1%	Deficiency 2·1%
1 year to December 31, 1936 (including depreciation) ..	89·0%	Surplus 11·0%
1 year to December 31, 1937 (including depreciation) ..	82·7%	Surplus 17·3%
1 year to December 31, 1938 (including depreciation) ..	78·6%	Surplus 21·4%
1 year to December 31, 1939 (including depreciation and provision for doubtful debts)	80·6%	Surplus 19·4%
1 year to December 31, 1940 (including depreciation and provision for taxation)	81·9%	Surplus 18·1%
1 year to December 31, 1941 (including depreciation and provision for taxation)	89·5%	Surplus 10·5%

The percentage of rent revenue, expenses and depreciation and the percentage of net surplus for the year to the capital value of the land and building (British Medical Association House) as shown by the books at December 31, 1941, namely £166,848 11s. 3d., with the previous year's percentages in parentheses, are as follows:

		1940.
Rent Revenue (including amount charged for British Medical Association Branch Offices *et cetera*)	10·15%	(10·29%)
Sundry Expenses, Interest and Provision for Painting Building ..	7·40%	(6·77%)
Depreciation of Building	1·68%	
	9·08%	(1·65%)
Net Surplus for Year	1·07%	(1·87%)

Financial Statement.

The Council has pleasure in presenting to members the balance sheet and accounts in respect of the financial year which terminated on December 31, 1941.

The net surplus of revenue over expenditure for the year amounted to £2,383 1s. 5d. after making provision for all known expenses.

The sum of £2,981 5s. 4d. has been written off for depreciation of the building (British Medical Association House), plant, office furniture and equipment, and the library.

A sum of £200 has been provided out of the current year's revenue to create a reserve for painting the exterior of the building. This amount for the time being is used in the business of the Association.

NEW SOUTH WALES BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

Balance Sheet as at December 31, 1941.

	£ s. d.	£ s. d.
FIXED LIABILITIES.		
Debentures—		
90 4% Series "A" at £10 each ..	900 0 0	
390 4·65% Series "B" at £50 each	19,500 0 0	
212 4·65% Series "C" at £10 each	2,120 0 0	
	22,520 0 0	
Less Amount Unpaid	62 0 0	
	22,458 0 0	
Australian Mutual Provident Society (secured by Mortgage over Property, British Medical Association House)	73,000 0 0	
		95,458 0 0
CURRENT LIABILITIES.		
Sundry Creditors	332 1 6	
Interest Accrued on Mortgage ..	273 15 0	
Deposit at Call	700 0 0	
		1,305 16 6
OTHER CREDIT BALANCES.		
Subscriptions Paid in Advance ..		88 5 1
Provision for Taxation		2,000 0 0
Provision for Painting of Building		471 0 0
ACCUMULATED FUNDS.		
Balance at December 31, 1940 ..	76,051 18 0	
Add Surplus for year ended December 31, 1941—		
Branch Account £596 1 11		
Premises Account 1,786 19 6		
	2,383 1 5	
		78,434 19 5
		£177,758 1 0

	£ s. d.	£ s. d.
FIXED ASSETS.		
Land and Building, British Medical Association House—at Cost *less* Depreciation on Building 166,848 11 3		
Library—at Valuation *less* Depreciation	1,376 16 2	
Office Furniture and Equipment—at Valuation *less* Depreciation ..	592 0 5	
Debentures in other Companies—		
Australasian Medical Publishing Company Limited (face value)	100 0 0	
Commonwealth Treasury Bonds (face value)	3,000 0 0	
		171,917 7 10
FLOATING ASSETS.		
Sundry Debtors (after making provision for doubtful debts)—		
Sundry Tenants, Rent *et cetera*	1,892 12 10	
Cash on Hand	12 9 1	
Commercial Banking Co. of Sydney Limited—		
Premises and Branch Current Accounts	1,272 18 1	
Fixed Deposits	2,000 0 0	
		5,178 0 0
OTHER DEBIT BALANCES.		
Prepaid Insurance Rates *et cetera* ..		662 13 2
		£177,758 1 0

WILFRED VICKERS, President.
GEORGE BELL, Hon. Treasurer.
ROBT. J. STIFFE, Financial Secretary.

Sydney, February 20, 1942.

We have examined the foregoing Balance Sheet with the Books of Account of the New South Wales Branch of the British Medical Association, and, having obtained all the information and explanations we have required, we are of the opinion that such Balance Sheet is properly drawn up so as to exhibit a true and correct view of the state of the Company's affairs according to the best of our information and the explanations given to us and as shown by the Books of the Company. In our opinion the Register of Members and other records which the Company is required to keep by the New South Wales Companies Act, 1936, or by its Articles have been properly kept.

London Bank Chambers,
18-20 Martin Place, Sydney.

(Sgd.) F. W. DUESBURY, HARTIGAN & Co.,
Chartered Accountants (Aust.).

BRANCH ACCOUNT.

Income and Expenditure Account for the Year ended December 31, 1941.

December 31, 1941.	£	s.	d.	£	s.	d.
To Salaries	2,908	5	9			
„ Rent—Offices *et cetera*	1,000	0	0			
„ Printing and Stationery	309	7	10			
„ Stamps and Telegrams	267	8	0			
„ Telephones	125	12	4			
„ Legal Expenses	6	6	0			
„ Travelling Expenses	50	3	9			
„ Insurance	6	0	5			
„ Exchange and Bank Charges	8	19	6			
„ Refreshments—Meetings	24	4	6			
„ Newspapers	5	16	4			
„ Sundry Petty Expenses	50	10	0			
„ Gratuity	60	0	0			
„ Tea Money	50	2	6			
„ Federal Council	555	0	0			
„ Pay-Roll Tax	28	11	7			
				5,456	8	6
„ Allowance for Depreciation of—Library	125	18	5			
Office Furniture and Equipment	52	0	2			
				177	18	7
„ Balance, being Surplus for the year ended December 31, 1941, transferred to Accumulated Funds Account				596	1	11
				£6,230	9	0

December 31, 1941.	£	s.	d.	£	s.	d.
By Subscriptions Received—						
1941	9,743	10	9			
1940	423	17	9			
Previous years	31	15	0			
				10,199	3	6
Less Proportion due to—British Medical Association	2,374	7	11			
THE MEDICAL JOURNAL OF AUSTRALIA	1,846	15	0			
				4,221	2	11
				5,978	0	7
„ Interest	56	18	11			
„ Rent—Assembly Hall	62	15	6			
„ Broadcasting Fees	117	4	0			
„ Sales—C.F.A. *et cetera*	15	10	0			
				252	8	5
				£6,230	9	0

Dr. George Bell moved that the balance sheet, the statement of receipts and expenditure and the premises account be received. The motion was seconded by Dr. G. M. Barron. Dr. Barron also seconded Dr. Bell's motion that the statements be adopted. Both motions were carried.

ELECTION OF OFFICE BEARERS.

Colonel Vickers announced that the following had been elected members of the Council for the ensuing year: Dr. George Barron, Dr. George Bell, Lieutenant-Colonel Sir Charles Blackburn, Dr. K. S. M. Brown, Dr. A. J. Collins, Dr. A. M. Davidson, Dr. L. A. Dey, Dr. B. T. Edye, Dr. T. M. Greenaway, Dr. H. R. R. Grieve, Dr. P. L. Hipsley, Professor W. K. Inglis, Colonel A. M. McIntosh, Lieutenant-Colonel K. C. T. Rawle, Lieutenant-Colonel A. C. Thomas, Dr. E. A. Tivey, Professor H. K. Ward, Dr. G. C. Willcocks.

Messrs. F. W. Duesbury, Hartigan and Company were appointed auditors for the ensuing year.

INCOMING PRESIDENT'S ADDRESS.

Dr. W. F. Simmons delivered his president's address (see page 483). At the conclusion of the address Dr. H. R. R. Grieve moved a vote of thanks to Dr. Simmons for his address. Professor W. K. Inglis seconded the vote of thanks, which was carried by acclamation.

INDUCTION OF PRESIDENT.

Colonel W. Vickers inducted the President for the year 1942-1943 (Dr. W. F. Simmons). Dr. Simmons thanked the members for his election.

Correspondence.

FLUOROSCOPY.

SIR: At present there is a wave of enthusiasm for fluoroscopy by physicians and surgeons.

The danger of this work to patient and operator is great and is not appreciated by the profession.

Exposures should be reduced to a minimum. In two recent cases of injury from screening, medical men have had to pay substantial damages. Late radiological literature has recorded numerous cases of injury to surgeons who have practised reduction of fractures under the screen.

The fluoroscopy of chest cases is of value in cardiac lesions, but it is of little value in pulmonary conditions except for the control of pneumothorax or for the localization of hydatids or effusions. It is of no value in diagnosing tuberculosis or checking its progress; films should always be made.

No patient should receive more than four minutes' exposure to screening currents in any three weeks. These examinations should be checked by electric timing apparatus which cuts off every minute and has to be reset for the next exposure.

No attempt should be made to screen until the observer has been in complete darkness for ten minutes by the clock and, in between examinations, no light should be used except an approved ruby or green light.

When a technician is available his advice as to operation of apparatus should always be accepted without question.

Yours, etc.,

J. G. EDWARDS.

185, Macquarie Street,
Sydney,
April 15, 1942.

THE PRACTICAL RESULTS OF IMMUNIZATION AGAINST DIPHTHERIA.

SIR: What immunization can accomplish in combating diphtheria is shown by the remarkable drop in its incidence in Brisbane.

The local authority of Brisbane—the city under review—has an area of 375 square miles and a population of 341,000. In January, 1938, I decided to make every effort to speed up the council's free immunization service. I used every available means to impress upon parents the importance of having their children, especially their children of pre-school age, immunized. The response exceeded my most sanguine expectations.

In the four years and three months period, namely from January, 1938, to April 30, 1942, I have fully immunized 27,217 children. This rate of immunization in Brisbane, which is averaging approximately 6,400 *per annum*, is, in the period under review, considerably in excess of the birth rate. To this must be added an unknown but considerable number of children immunized by private practitioners in Brisbane, and I am pleased to be able to state that, as I write, the response of children is still being maintained. Records disclose that at least 75% of this total are children of pre-school age.

By educative methods the stage has now been reached in Brisbane when the vast majority of parents realize that they owe this simple duty to their children.

The maximum incidence of the disease occurs during the second, third and fourth years of life, and as large numbers of immunized children of this age group are appearing every day in increasing numbers in Brisbane, the incidence of the disease now shows the anticipated spectacular fall.

Here are the figures for this period:

Population and Diphtheria Cases.

	1938.	1939.	1940.	1941.	1942 (3 months).
Population	325,890	326,000	333,560	335,520	341,000
Cases	459	505	231	202	22

Brisbane has now at least 80% of its susceptible child population immunized, and the occurrence of only 22 cases for the three months of 1942 is a phenomenally low incidence in a population of 341,000 people, and the objective of a diphtheria-free Brisbane, for which I am striving, is, on these figures, soon to be attained.

Yours, etc.,

RALPH WEAVER,
Medical Officer of Health.

Town Hall,
Brisbane,
April 16, 1942.

National Emergency Measures.

MEDICAL EQUIPMENT.

THE Medical Equipment Control Committee desires to direct the attention of all members of the medical profession to the following information.

Emergency Notice—Quinine.

The Medical Equipment Control Committee has caused a regulation to be gazetted under the powers conferred by the National Security (Medical Co-ordination Equipment) Regulations confining the use of quinine to a medical prescription basis. By far the chief source of supply of this drug was Java, and it will be obvious that, in consequence of the loss of this country, every effort must be made to preserve stocks of quinine strictly for antimalarial use. It is, therefore, imperative that no medical practitioner should write a prescription containing this drug for any other purpose. The use of quinine in ammoniated tinctures, tonics, syrups *et cetera* must cease forthwith.

Sedatives.

The attention of the committee has been directed to the fact that medical practitioners are continuing to prescribe various sedatives in sixteen or twenty-four dose mixtures in cases for which continued sedative treatment is not required. It is suggested that the essential number of doses should be marked upon the prescription so that instead of indicating the volume of the mixture the number of doses should be stated. It will be just as simple to write eight doses as to write eight ounces, and such an alternative, when possible, would mean the saving of half the quantity.

Nominations and Elections.

THE undermentioned have been elected members of the New South Wales Branch of the British Medical Association:

Dolman, Bruce Hunter, M.B., B.S., 1941 (Univ. Sydney), 46, Mona Road, Darling Point.

Kidd, Donald Stuart, M.B., B.S., 1941 (Univ. Sydney), Sydney Hospital, Macquarie Street, Sydney.

Marsh, Stafford Howie, M.B., B.S., 1939 (Univ. Sydney), 65, Belgrave Street, Kempsey.

McKenzie, Mavis Hinemoa, M.B., B.S., 1941 (Univ. Sydney), Bathurst District Hospital, Bathurst.

Sands, John Robert, M.B., B.S., 1941 (Univ. Sydney), Royal Prince Alfred Hospital, Missenden Road, Camperdown.

Syred, Roy Harding, M.B., B.S., 1939 (Univ. Sydney), Royal Hospital for Women, Paddington.

White, Richard Cecil, M.B., B.S., 1941 (Univ. Sydney), Eastern Suburbs Hospital, York Road, Waverley.

Medical Appointments.

Dr. Karl Francis Edwards has been appointed a Resident Medical Officer at Parkside Mental Hospital, Hospitals Department, South Australia.

Dr. Alexander Jamieson Meikle has been appointed an Official Visitor to the Mental Hospital, Parkside, South Australia.

Dr. Harold William Horn has been appointed a Member of the Medical Board of Queensland, pursuant to the provisions of *The Medical Acts, 1939 to 1940.*

Books Received.

"Text-Book of Pathology", by Sir Robert Muir, M.A., M.D., Sc.D., LL.D., F.R.S.; Fifth Edition; 1941. London: Edward Arnold and Company. Medium 8vo, pp. 999 with 599 illustrations. Price: 35s. net.

"Illustrations of Bandaging and First-Aid", compiled by Lois Oakes, S.R.N., D.N. (Leeds and London); Second Edition; 1942. Edinburgh: E. and S. Livingstone. Demy 8vo, pp. 264, with 300 illustrations. Price: de luxe edition, 6s. net; cheap-papered edition, 4s. 6d. net.

Diary for the Month.

APR. 28.—New South Wales Branch, B.M.A.: Medical Politics Committee.
APR. 30.—New South Wales Branch, B.M.A.: Branch.
MAY 1.—Queensland Branch, B.M.A.: Branch.
MAY 6.—Western Australian Branch, B.M.A.: Council.
MAY 7.—South Australian Branch, B.M.A.: Council.
MAY 8.—Queensland Branch, B.M.A.: Council.
MAY 12.—Tasmanian Branch, B.M.A.: Branch.
MAY 20.—Western Australian Branch, B.M.A.: Branch.
MAY 22.—Queensland Branch, B.M.A.: Council.
MAY 28.—South Australian Branch, B.M.A.: Branch.
MAY 28.—New South Wales Branch, B.M.A.: Branch.
MAY 29.—Tasmanian Branch, B.M.A.: Council.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Honorary Secretary, 135, Macquarie Street, Sydney): Australian Natives' Association; Ashfield and District United Friendly Societies' Dispensary; Balmain United Friendly Societies' Dispensary; Leichhardt and Petersham United Friendly Societies' Dispensary; Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney; North Sydney Friendly Societies' Dispensary Limited; People's Prudential Assurance Company Limited; Phœnix Mutual Provident Society.

Victorian Branch (Honorary Secretary, Medical Society Hall, East Melbourne): Associated Medical Services Limited; all Institutes or Medical Dispensaries; Australian Prudential Association, Proprietary, Limited; Federated Mutual Medical Benefit Society; Mutual National Provident Club; National Provident Association; Hospital or other appointments outside Victoria.

Queensland Branch (Honorary Secretary, B.M.A. House, 225, Wickham Terrace, Brisbane, B.17): Brisbane Associated Friendly Societies' Medical Institute; Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 178, North Terrace, Adelaide): All Lodge appointments in South Australia; all Contract Practice appointments in South Australia.

Western Australian Branch (Honorary Secretary, 205, Saint George's Terrace, Perth): Wiluna Hospital; all Contract Practice appointments in Western Australia.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to the Editor, THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales. (Telephones: MW 2651-2.)

Members and subscribers are requested to notify the Manager, THE MEDICAL JOURNAL OF AUSTRALIA, Seamer Street, Glebe, New South Wales, without delay, of any irregularity in the delivery of this journal. The management cannot accept any responsibility unless such a notification is received within one month.

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